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PERSPECTIVES

ON LABOUR AND INCOME

SPRING 2001

Vol. 13, No. 1

■ 2000 IN REVIEW

■ CHOOSING PART-TIME

■ AGING LABOUR FORCE

■ TAXES INTERNATIONALLY II

■ OVERQUALIFIED?

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ON LABOUR AND INCOME

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PERSPECTIVES

ON LABOUR AND INCOME

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Zhengxi Lin

This article provides an overview of changes between 1980 and 1997 in various taxes in the G-7 and OECD countries.

45 Overqualified? Recent graduates, employer needs

Marc Frenette

What percentage of recent Canadian graduates have more postsecondary education than their main job requires? And do those graduates enjoy an earnings advantage or disadvantage? This article explores these questions. (Adapted from an article in the Winter 2000 issue of *Education Quarterly Review*.)

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Perspectives on Labour and Income

The quarterly for labour market and income information

Forum

From the Managing Editor

■ First it was the education system: elementary, secondary and postsecondary, in turn. Next, the labour market. Soon the social security and health care systems will feel the wave. The baby boom tsunami is reaching the shores of retirement.

If current patterns of labour force participation continue, the ratio of retirees to workers will climb sharply over the coming decades. "Demography and the labour market" summarizes a wide spectrum of studies exploring various shifts in labour market behaviour at the end of the twentieth century. As author Deborah Sunter states, "The challenge...is to isolate changes that are structural from those that are cyclical....[F]orecasts are only as good as their assumptions....[L]onger-term trends can end or reverse, and...change is constant."

"Part-time by choice" examines those who voluntarily work part time, as well as their reasons for doing so, their levels of work-related stress, and their job characteristics. The study found that although the part-time employment rate decreased slightly in the late 1990s, the proportion of part-timers who chose such jobs and did not want full-time work, increased. Consequently, the proportion of involuntary part-time workers—those who would have preferred full-time work—decreased.

The inclusion of the year-end review in this issue completes the integration of the *Labour Force Update* into *Perspectives*. This annual recap of noteworthy

developments in the labour market continues a decade-long staple of our analytic output. Since the year 2000 marked the end of a decade, this year's review also looks back at some major changes over the last 10 years of the twentieth century. Complementing the analysis is a set of charts and tables covering various facets of the labour market. These appear in "Key labour and income facts."

Online archives

In our continuing efforts to enhance our content, we are putting our inventory of articles online. The first set covers the years 1995 to 1999. The articles are in PDF format and can be accessed through a subject index. HTML versions will be added this year. For the years 1989 to 1994, only HTML versions will be available. Articles from 2000 will be available in January 2002.

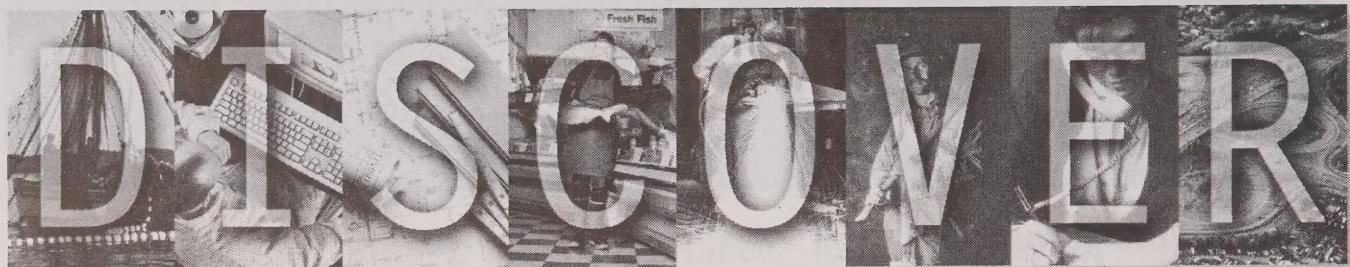
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Perspectives

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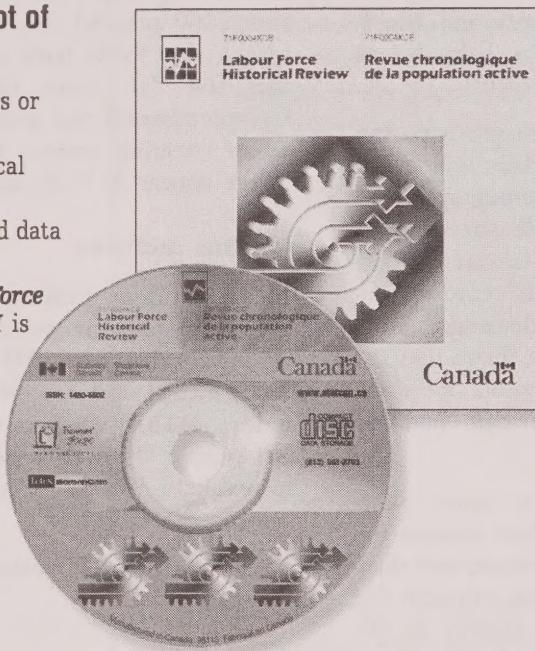
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Highlights

In this issue

■ The labour market: Year-end review

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- The year 2000 was another good one for the Canadian labour market. Employment continued a four-year climb, while the unemployment rate remained at a low not seen since the 1970s.
- In the first nine months of 2000, goods-producing GDP increased by 2.2%, about half the comparable rate in 1999. At the same time, the service sector continued to grow at a pace similar to that of 1999.
- Following strong growth of almost 6% in 1999, manufacturing employment slowed to a more moderate pace in 2000. Declining over the summer, it picked up strongly in the last three months, ending the year up 60,000 (3%).
- Of the 319,000 increase in employment in 2000, some 263,000 jobs were full-time while the remaining 56,000 were part-time. This equates to growth rates of 2.2% and 2.1%, respectively. In 1999, part-time employment had actually fallen.
- Employment was also up in sales and service occupations. Over the year, some 124,000 (3%) sales and service workers were added, driven by hiring at retail and wholesale outlets. But, while the number of these workers in trade rose in 2000, there were fewer retail and wholesale store managers.
- The year 2000 was the first since 1986 that self-employment declined. The drop was significant, as 146,000 fewer people worked for themselves by the end of the year, a decline of 6%. About one-third of this can be attributed to reduced farm employment. The number of self-employed farmers declined by 50,000.

- In contrast to self-employment, the increase in the number of private sector employees was unusually strong in 2000, jumping 376,000 (4%). With the increase in 2000, the proportion of all employed people engaged in paid employment in the private sector finally surpassed the 1989 peak.
- For the second consecutive year, more people worked in the public sector, which rose by 89,000. With declines in both public administration and education employment in 2000, health care and social assistance provided most of the increase.
- Over the year, employment among women of "core" working age (25 to 54) increased by 115,000 (2%). This exceeded their population growth, pushing their employment rate up 0.9 percentage points over the year to 74.4%.
- Employment rose in almost every province, especially Ontario, the largest. Moreover, although 40% of all employment was in that province, 60% of the increase occurred there. Also gaining disproportionately were Alberta, British Columbia and the three Maritime provinces.

■ Part-time by choice

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- In 1999, almost one in five workers (2.7 million) spent less than 30 hours per week at his or her main job. Voluntary part-time workers—those who chose the work arrangement and reported not wanting full-time work—numbered 2 million, about 14% of total employment and 73% of part-time employment.
- A full 80% of voluntary part-time workers were young men (15 to 24) (18%) or women under 55 (62%). Only 43% of full-time workers fell into these categories. While almost all youths reported

school attendance, and all older workers (55 and over), preference, as the main reason for working part time, those 25 to 54 gave a variety of reasons. Women cited preference (45%) and family responsibilities (44%), while men cited preference (44%) and school attendance (26%).

- In 1999, some 93% of full-time workers were in a permanent job, compared with 86% of voluntary and 74% of involuntary part-time workers. Similarly, average hourly earnings were highest for full-time workers aged 25 and over (\$16.00), second highest for voluntary part-time workers (\$14.50), and lowest for involuntary part-time workers (\$12.00).
- Roughly 4 in 10 full-time workers said that work caused them stress, compared with just one in 10 part-time workers. Also, more part-time than full-time workers were satisfied with the balance between job and home: 83% versus 72%, respectively.
- The bulk of the increase in part-time employment resulted from growth in part-time work across all industries. Almost one-third came from a shift toward the service sector, traditionally an area high in part-time work.

■ Demography and the labour market

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- Over the next half century, growth in the ratio of retirees to workers will put unprecedented stress on social security programs.
- The ratio is constrained largely by the current shape of the population pyramid. If current age-sex participation rates hold, the overall participation rate could drop from about 65% in 2000 to about 63% in 2010. By 2020, the rate could be below 60% and may fall even more quickly, to about 57% by 2025.
- Of course, age-sex participation rates have changed a great deal in the last 50 years, and will probably continue to change, in response to institutional change and economic conditions.

■ The recent decline in the participation of young people appears to have been the result of a combination of factors: increased school attendance, depressed job opportunities and a downward shift in the age composition of the youth group. As skilled workers will be increasingly in demand, youths will tend to remain in school longer. Hence, it is unlikely that youth participation rates will rise significantly in the future.

- The most important influence on the total participation rate over the last 50 years was the dramatic increase among adult women. In the 1970s and 1980s, each successive cohort of women spent more time in the labour force. This, coupled with the size of these baby boom cohorts, pushed up the overall rate dramatically.
- The continued growth in women's investment in education will likely put upward pressure on their age-specific participation rates after age 25, but not enough to offset the downward effect on their overall participation rate as baby boom cohorts leave the labour market.
- Trends in the overall participation rate have also been greatly influenced by the downward trend in the age of retirement. Although it varies greatly, the median age of retirement among men has been falling for several decades. It was close to 65 in the late 1970s and early 1980s, and declined fairly steadily from the mid-1980s to the late-1990s, reaching a low of 61.3 in 1997.
- Just as with retirement age, over the longer term the participation rates of older men have trended down, with a slight upturn in 1999 and 2000.
- Factors that may influence the retirement age in the future are the extent of self-employment (the self-employed tend to retire later), the availability of flexible transitions into retirement (for example, part-time work) and the extent to which older workers are covered by pension plans.

Recent trends in taxes internationally

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- In 1997, Canada's overall taxation ranked in the middle of the G-7 countries and the 29 members of the Organisation for Economic Co-operation and Development (OECD). Between 1980 and 1997, Canada's total tax-to-GDP ratio increased by 4.8 percentage points (from 32.0% to 36.8%) or 15.0%.
- Over the same period, Canada's personal tax revenues as a percentage of GDP went up by 3.1 percentage points (from 10.9% to 14.0%) or 28.4%.
- Canada's corporate tax revenues as a percentage of GDP went up by only 0.1 percentage point (from 3.7% to 3.8%) or 2.7%.
- From 1980 to 1997, Canada's total payroll tax revenues as a percentage of GDP increased by 2.3 percentage points or 67.6%.
- From 1980 to 1997, Canada's consumption tax revenues as a percentage of GDP decreased by 1.4 percentage points (from 10.4% to 9.0%) or 13.5%.

Overqualified? Recent graduates, employer needs

... p. 45

- Throughout the 1980s and 1990s, overqualification rates varied substantially by field of study at the college and bachelor's levels. Almost one-half of bachelor's graduates of fine arts and humanities and other social sciences (excluding economics) required less than a college diploma to obtain their main job. At the master's level, little variation existed.
- Overall, roughly one-third of graduates were overqualified for their main job.
- Although master's graduates were more likely than others to be overqualified, they were rarely

overqualified by two or more levels. In other words, their main job often required a bachelor's degree. College and bachelor's graduates were more likely to be overqualified by two or more levels. At the college level, for example, anywhere from 31% to 43% of graduates required a high school diploma or less to obtain their main job.

- College and bachelor's graduates' overqualification was associated with a loss in earnings and in use of skills acquired in school. This was not the case for master's and doctoral graduates.

What's new?

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Data initiative

Statistical research centres

Just released

Work Absence Rates, 1987 to 1998

Historical CALURA data

New census module

Canadian Culture in Perspective: A Statistical Overview

Training enrolment, 1997-98

1997 Geography Catalogue

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Longitudinal data update

Labour Force Survey Products and Services, 2000-2001

Low-income Cutoffs from 1990 to 1999 and Low-income Measures from 1989 to 1998

Payroll deduction series

RRSP Contribution Limits

Survey of Financial Security: Update

Household expenditures, dwelling characteristics and household equipment:

Canada, Provinces/Territories and Selected Metropolitan Areas, 1999

Income Quintile, Canada, 1999

Household Income Quintile, Canada and the Provinces, 1999

Housing Tenure, Canada, 1999

Household Type, Canada, 1999

Size of Area of Residence, Canada, 1999

User guide to Survey of Household Spending
Benchmarking Adult Literacy in North America: An International Comparative Study

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The labour market: Year-end review

Geoff Bowlby

The year 2000 was another good one for the Canadian economy and labour market. Employment continued a four-year climb, while the unemployment rate remained at a low not seen since the 1970s.

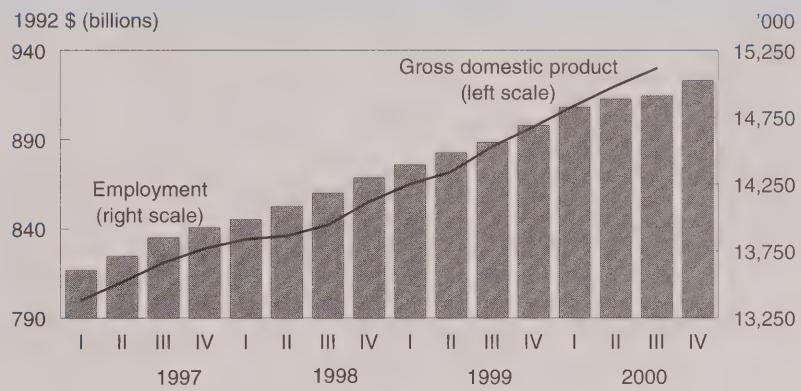
While it was a *good* year for job seekers and workers, it was not a *great* year. Entering 2000, a fast-growing economy had delivered 37 consecutive months of employment gains.¹ The year started with a bang and employment growth continued to move forward in the first quarter.

However, even though gross domestic product (GDP) growth continued to be strong, signs that the economy was slowing began to appear in the second quarter (Statistics Canada, 2000), which eventually affected the labour market. Employment plateaued over the summer, the first time this had happened since 1996 (Chart A).

With some indications of a slowdown in the U.S. market, exports to that country slipped slightly in the third quarter, ending 14 consecutive quarterly gains. Still, domestic demand remained strong, and in the second half of the year the labour market rebounded from its summertime plateau with strong job gains.

Geoff Bowlby is with the Labour Statistics Division. He can be reached at (613) 951-3325 or bowlge@statcan.ca.

Chart A: Gross domestic product and employment continued to rise in 2000.



Sources: Labour Force Survey and System of National Accounts, seasonally adjusted

By the end of the year, employment was up more than 319,000, a healthy increase of 2%, though less than the over 400,000 (3%) average of the previous three years. Even though employment growth slowed in 2000, participation in the labour market continued to climb. As a result, the unemployment rate stayed in the 6.8% range throughout the year, the lowest since the 1970s (Chart B).

Strength in the labour market shifted to services

In the first nine months of 2000, goods-producing GDP increased by 2.2%, about half the comparable rate in 1999. At the same time, the service sector continued to grow at a pace similar to that of 1999 (Chart C).

Slower economic growth in the goods sector was reflected in the labour market. Indeed, for every additional goods-producing job, 10 service jobs appeared. This came about as manufacturing growth slowed to a more moderate pace than 1999's (Statistics Canada, 2000) and farm employment dropped sharply (Table 1).

Increased demand for workers in the service sector had the expected effect on the mix of occupations. For example, sales and computer-related jobs were more plentiful in 2000 than in the year before. More jobs in this sector also led to an increase in part-time work, a change from the previous year, when part-time employment actually fell. As well, youths and core-age (25 to 54)

Table 1: Employment by industry

	December 2000	Change from December 1999	
	'000	'000	%
Total	15,066.7	319.2	2.2
Goods sector	3,891.8	26.5	0.7
Agriculture	347.5	-51.6	-12.9
Forestry, fishing, mining, oil and gas	277.7	2.4	0.9
Utilities	117.7	2.3	2.0
Construction	820.6	13.2	1.6
Manufacturing	2,328.4	60.2	2.7
Service sector	11,174.9	292.7	2.7
Trade	2,354.4	82.7	3.6
Transportation and warehousing	787.8	23.6	3.1
Finance, insurance, real estate and leasing	881.9	16.6	1.9
Professional, scientific and technical	988.6	62.1	6.7
Management, administrative and other support	559.2	41.7	8.1
Education	952.1	-49.6	-5.0
Health care and social assistance	1,523.7	51.8	3.5
Information, culture and recreation	700.6	64.4	10.1
Accommodation and food	965.7	15.1	1.6
Other	698.4	-10.5	-1.5
Public administration	762.4	-5.4	-0.7

Source: Labour Force Survey, seasonally adjusted

women, who are more likely than men to work in the service sector, gained over three-quarters of the jobs.

Employment grew equally in professional, scientific and technical services, and information, culture and recreation. Smaller

increases appeared in health care and social assistance, and management, administrative and other support services. The largest increase, however, occurred in the industry that employs the most: retail and wholesale trade.

Added work in “high-tech” services

Growth in professional, scientific and technical services was driven by computer design services—an industry providing a wide range of computer-related services, including programming, Internet page design and computer systems analysis, design and integration. At the end of 2000, one-quarter million people worked in the computer systems design industry (up 20,000 or 9% from 1999). Only 6% did so on a part-time basis. Employment in this industry has tripled since early 1994, when the strong upward trend began.

Undoubtedly, such growth led to strong demand for programmers, systems analysts and computer engineers. Collectively, employment in these three occupations jumped 20,000 (6%) to 355,000 (Chart D).

Information, culture and recreation also up

Strong demand for highly trained computer professionals is one indicator of the so-called “knowledge” economy. So too is the growth in information, culture and recreation (64,000 or 10%), an industry related to the use of the Internet and other information media.

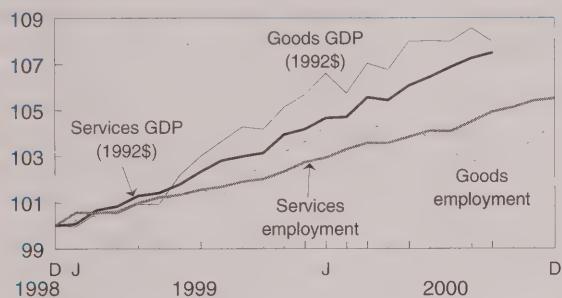
Chart B: The participation rate continued to climb in 2000, holding the unemployment rate steady.



Source: Labour Force Survey, seasonally adjusted

Chart C: Goods-producing GDP and employment cooled from their 1999 pace.

December 1998=100

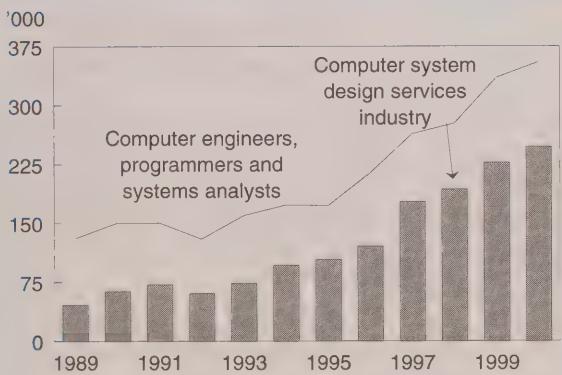


Sources: Labour Force Survey and System of National Accounts, seasonally adjusted

Growth in this industry was spurred by added jobs in a few key areas. Broadcasting and telecommunications employment increased 22,000 (11%), while jobs in publishing rose by 19,000 (24%) in 2000. Finally, employment in information services and data processing services was up 10,000 (24%). This industry includes news syndicates, libraries and companies that provide Internet access services.

Over the last half of the 1990s, employment in amusement, gambling and recreation establishments grew strongly, a trend that continued in 2000 with an increase of 21,000 jobs (15%). While added casino

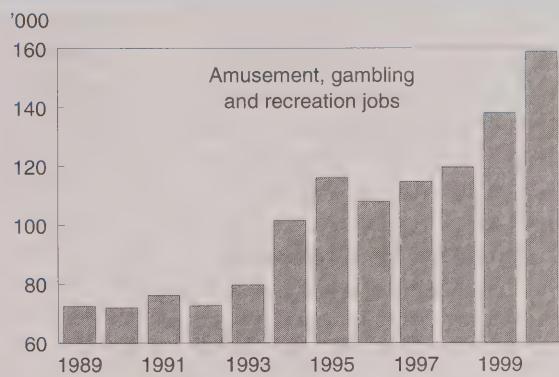
Chart D: Employment continued to soar in the major computer-related industries and occupations.



Source: Labour Force Survey, unadjusted December levels

employment made up about 40% of this increase, recreational facilities such as golf courses, ski hills and fitness centres accounted for another half. At close to 160,000, the number of amusement, gambling and recreation workers was more than double that at the start of the 1990s (Chart E).²

Chart E: Finally, the leisure era?



Source: Labour Force Survey, unadjusted December levels

Rising employment services and business support services

Behind discussion of the "new economy" is the notion that competitive and technological pressures have radically altered the economy and the labour market (Picot and Heisz, 2000). One of the expected outcomes of increased competition is a greater reliance on contracting-out. There is some evidence that firms are increasingly buying services once provided in-house. Over the last decade, employment in companies providing employment services (employment placement agencies, temporary help services and employee leasing services) has increased markedly. Growth in this industry, part of management, administrative and other support services, indicates that companies may increasingly be relying on other firms to help them with their human resource services needs. In 2000, an additional 17,000 people (25%) worked in employment services. By the end of the year, some 85,000 workers were in this industry, more than double the level of 1994.

Growth in another part of management, administrative and other support services—business support services—has also been linked to contracting-out. People employed in this industry are engaged primarily in activities such as desktop publishing, word processing, telephone answering and voice mail services, telemarketing services and photocopying services. In 2000, employment in business support services rose 36,000. Like employment services, employment in this industry has doubled in the last six years, hitting 88,000 by the end of 2000.

More work in retail and wholesale trade

The industry employing the most people in Canada is retail and wholesale trade. Following a slow start in 2000, retail sales accelerated in the middle of the year and by October, were 3.4% higher than at the start of the year. While the relationship between trade sales and employment is not always direct, improved sales at retail outlets may have led to greater

demand for workers in this industry. In 2000, trade employment rose 3.6% (83,000), reaching a level of over 2.3 million (Chart F).

Manufacturing slowed, agriculture dropped

Following strong growth of almost 6% in 1999, manufacturing employment slowed to a more moderate pace in 2000. Declining over the summer, it picked up strongly in the last 3 months, ending the year up 60,000 (3%). This represents a slowdown from the previous year but is still above the all-industry average. While still growing strongly, manufacturing shipments also slowed in the first 10 months of 2000. From January to October, they increased 5%, compared with 6% over the same period in 1999.

As manufacturing employment growth levelled off, the drop in farm employment accelerated (Chart G). Following a decline of 25,000 (6%) in 1999, the number of workers who counted agriculture as their main job fell another

52,000 (13%) in 2000, probably owing to a combination of factors. Continued labour market strength may have drawn some people, including farm spouses and children, off the farms and into better-paying jobs. Others may have been “pushed” as they faced financial problems caused by relatively low commodity prices, rising fuel and other farm input costs. Third, the typical agricultural worker is older than average, which suggests that the drop in farm employment may also reflect retirement.

In contrast to 1999, part-time work increased

In a year of services employment growth, some increase in part-time work is to be expected. Indeed, of the 319,000 increase in employment in 2000, some 263,000 jobs were full-time while the remaining 56,000 were part-time. This equates to growth rates of 2.2% and 2.1%, respectively. In 1999, part-time employment had actually fallen (Chart H).

After climbing in the first four years of the 1990s, the proportion of the employed working part time plateaued at around 19% for the next five. In the last two years, it was in the 18% range.

Sales and service occupations picked up

While employment by industry and job status tells a lot about the nature of employment growth, changes by occupation reveal more about the skills employers are demanding.³

With employment up in the service sector, it is no surprise that it also rose in sales and service occupations. Over the year, some 124,000 (3%) sales and service

Chart F: Trade employment increased, along with retail sales.

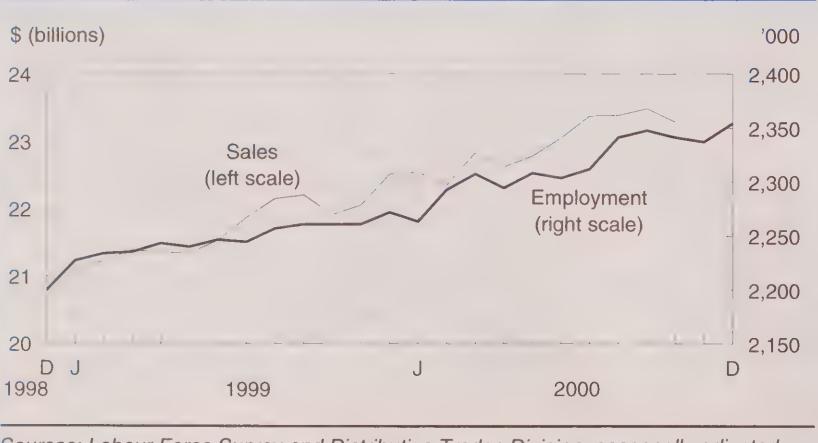


Chart G: Agricultural employment continued to decline in 2000.

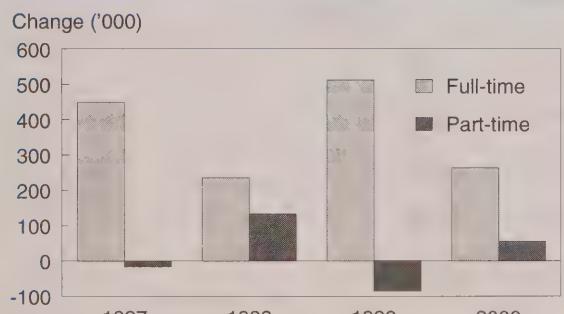


Source: Labour Force Survey, seasonally adjusted

workers were added, driven by hiring at retail and wholesale outlets. But, while the number of these workers in trade rose in 2000, there were fewer retail and wholesale store managers.

Among the major occupational groups, the next largest increase was in business, finance and administrative jobs. This set of occupations consists largely of clerical and secretarial workers. Most of the 122,000 (5%) increase occurred in two industries: professional, scientific and technical services (which includes the computer services industry mentioned earlier) and management, administrative and other support services.

Chart H: After falling the year before, part-time employment increased in 2000.



Source: Labour Force Survey, seasonally adjusted
December levels

The number of managers increased in several industries, most notably, in finance, insurance and real estate and in manufacturing. By the end of the year, they had grown by 61,000 (4%) (Chart I).

Also rising strongly was employment in natural and applied sciences, up 48,000 (5%). This occupation includes computer programmers, systems analysts and engineers. Not surprisingly, the number of natural and applied science workers in professional, scientific and technical services increased (most likely in the computer design services component). Manufacturing also increasingly employed natural science workers.

In 2000, the general skill level of manufacturing workers appears to have shifted upward, as fewer were employed in blue-collar processing occupations and more worked as managers, natural and applied science, and trades workers. Some of the explanation may lie in the changing nature of what is being manufactured in Canada. According to the Survey of Employment, Payrolls and Hours (which can provide more accurate detailed industry breakouts than the Labour Force Survey), the shift has been away from clothing and pulp and paper production and toward more technical communications equipment, aircraft and motor vehicle parts (Chart J).

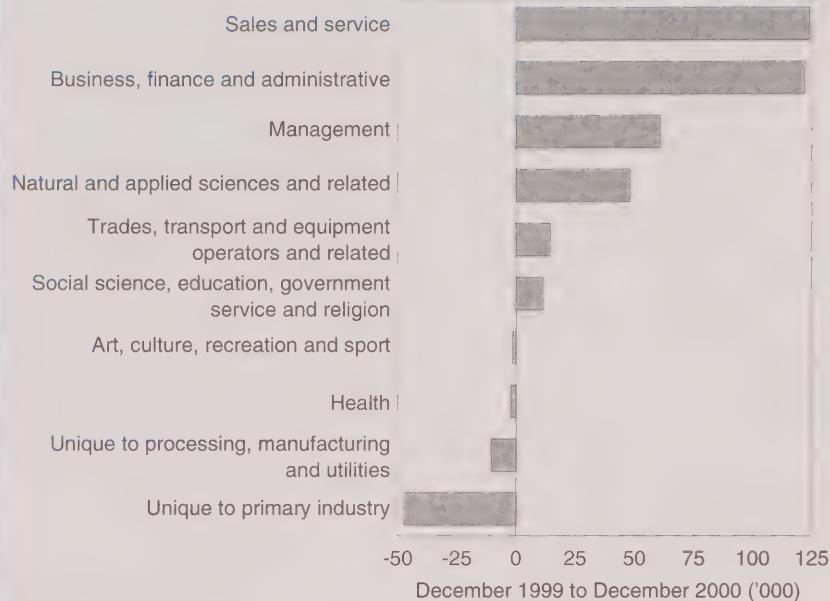
At the other end of the scale were employment losses in occupations unique to primary industry. Employment in this group fell by 47,000 (8%), not entirely unexpected given the decline in agricultural employment.

More workers at all skill levels

The issue of skills has probably always been an important aspect of the labour market. However, in recent years it has come to the forefront as the increased pace of technological change, heightened competitiveness and globalization, along with other factors, have changed the type and quality of skills demanded (and supplied) in the workforce.

In order to assess and track changes in the skill level of the workforce, a simple, coherent system is required. Using a method developed at Human Resources Development Canada, it is possible to assign a skill level to each occupation.⁴ This system divides workers into four groups, ranked from highest to lowest (A to D) in a skill hierarchy, and places managers in a separate group.

Chart I: Sales and service occupations increased the most.

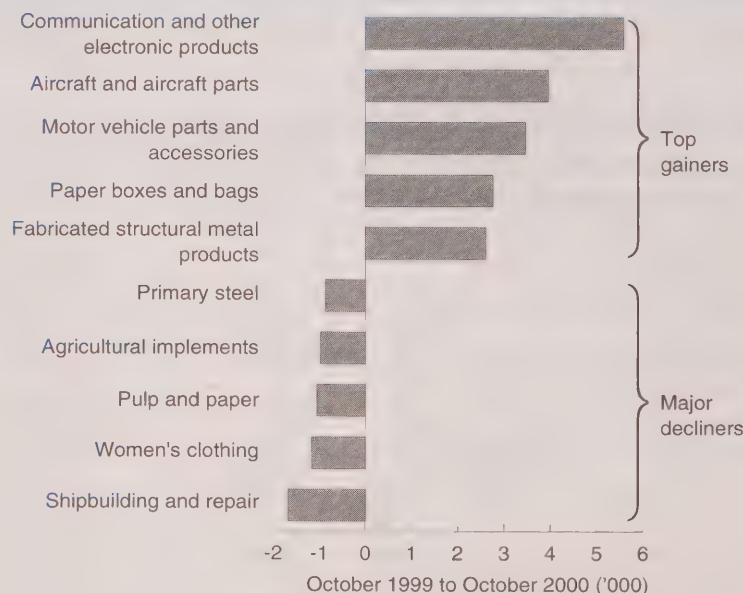


Source: Labour Force Survey, seasonally adjusted

drop was significant, as 146,000 fewer people worked for themselves by the end of the year, a decline of 6% (Chart L). About one-third of this can be attributed to reduced farm employment. The number of self-employed farmers declined by 50,000.

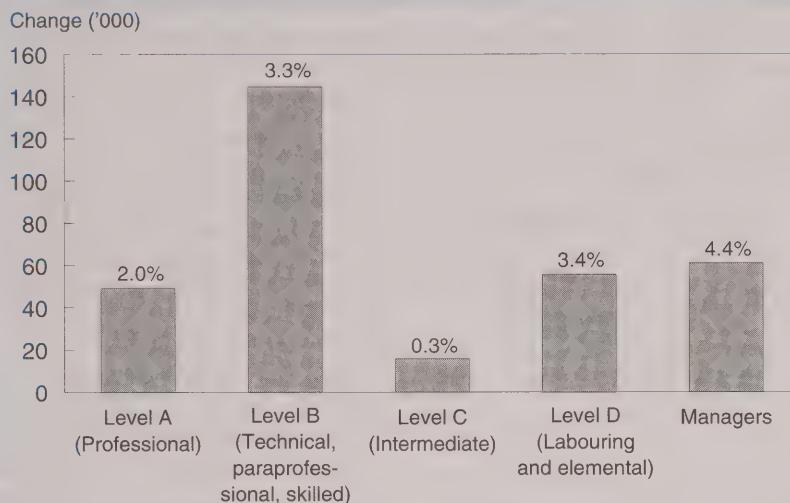
Self-employment also fell strongly in "other services," an industry made up of workers from a wide range of activities, including babysitting, which was second to farming among declines. Why did self-employment in other services drop? With employment rising in better-paying entry level jobs in such areas as retail trade, fewer teenagers may have been available to babysit. Or they may have been doing this only as a second job.⁵

Chart J: Employment changes in manufacturing reflected increased skill demands.



Source: Survey of Employment, Payrolls and Hours, unadjusted, preliminary data

Chart K: Employment increased at all skill levels in 2000.



Source: Labour Force Survey (using skill levels defined by Human Resources Development Canada), unadjusted December levels

occurred in social service employment, the bulk of the increase occurred in hospitals, especially among professional and nursing staff (Chart N).

Who found work?

The type of employment growth often determines who is hired. In 2000, growth in the service sector would certainly appear to have led to more work for youths and core-age women (Chart O), who are more likely than men to work in service jobs. Over the year, employment among women of core working age increased by 115,000 (2%). This exceeded their population growth, pushing their employment rate up 0.9 percentage points over the year to 74.4%.

Strong private sector hiring

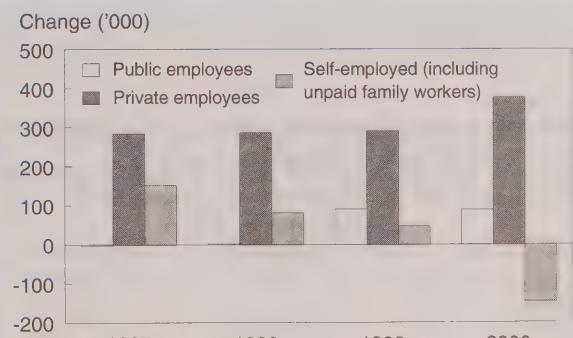
In contrast to self-employment, the increase in the number of private sector employees was unusually strong in 2000, jumping 376,000 (4%). After the recession of the early 1990s, hiring in the private sector did not resume in earnest until the latter part of the decade. With the increase in 2000, the proportion of all employed people engaged in paid employment in the private sector finally surpassed its 1989 peak. In November 2000, 65.6% of all employed people worked as private sector employees, the highest rate since at least 1976 (Chart M).

Workers in health care boosted public sector

For the second consecutive year, more people worked in the public sector, which rose by 89,000. With declines in both public administration and education employment in 2000, health care and social assistance provided most of the increase.

The largest component of health care and social assistance is employment in hospitals, although the industry also includes doctors' offices, nursing homes and social service agencies. While some growth

Chart L: While private sector hiring soared, self-employment dropped in 2000.



Source: Labour Force Survey, seasonally adjusted December levels

Added hospital and retail trade employment drove the increase in core-age female employment. More women were also employed as sales managers and supervisors, and teachers.

Chart M: After four years of strong growth, private sector paid jobs finally surpassed their pre-recession peak.



Source: Labour Force Survey, seasonally adjusted

Youths saw the next largest employment gain, with an increase of 90,000 (4%). The bulk of this increase was in retail trade. Their employment rate grew 1.8 percentage points, to 57.4%. Over the last three years, the percentage of youths with a job has increased over 6 points, more than that of any other group. Even with these strong gains, the youth employment rate remains almost 7 percentage points lower than its peak in the late 1980s.

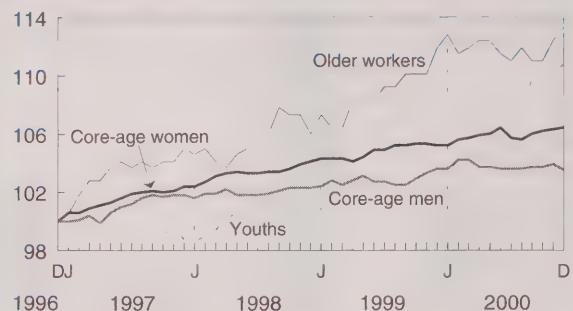
Chart N: After years of decline or little growth, employment in hospitals rose strongly in 2000.



Source: Labour Force Survey, unadjusted December levels

Chart O: The employment rate grew most for youths and core-age women.

December 1996=100

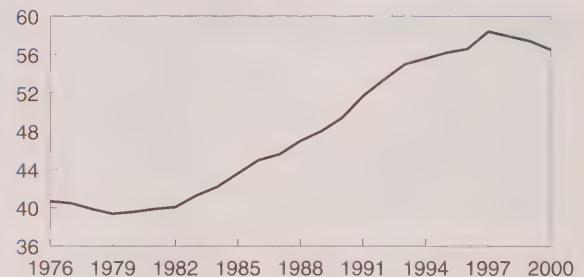


Source: Labour Force Survey, seasonally adjusted

As mentioned earlier, the unemployment rate was close to 6.8% throughout 2000, influenced by rising labour market participation. Much of this additional activity came from youths as school attendance fell. For the first time since 1979, the percentage of young people attending school full time dropped for three consecutive years. In 2000, 56% of youths attended school full time, down a full percentage point from the year before (Chart P).

Chart P: Full-time school attendance has fallen in recent years, perhaps because of added labour market participation.

Youths attending school full time (%)



Source: Labour Force Survey, eight-month average excluding May to August

Following a gain of 134,000 (2%) in 1999, employment growth among core-age men slowed to 58,000 (1%). Smaller employment gains in manufacturing, along with the decline in agriculture, contributed to the slowdown. The increase was not enough to keep pace with their population growth, leading to a slight drop in their employment rate (at 85.7%, still higher than any other group's).

The 56,000 increase in employment among older people was similar to that for core-age men, although the latter group is much larger. An increase of 4% was concentrated among older women in retail outlets and hospitals. Almost one-quarter of all people 55 or older were working in 2000, a rate last seen at the start of the 1990s.

Where were the jobs?

Employment rose in almost every province, especially Ontario, the largest. Moreover, although 40% of all employment was in that

province, 60% of the increase occurred there. Also gaining disproportionately were Alberta, British Columbia and the three Maritime provinces (Table 2).

Ontario continued to steam ahead

While manufacturing employment slowed in the rest of the country, it continued to improve at a strong pace in Ontario, jumping 78,000 (7%). With the increase in manufacturing and gains in parts of the service sector, employment rose by 186,000 over the year, an increase of 3.2%. Over the last four years, employment growth in the province averaged 3.4% per year.

The strong job increase was enough to raise Ontario's employment rate 0.8 percentage points, but a surge in labour force participation actually led to an increase in the unemployment rate. By the end of the year, the unemployment rate in Ontario was 6.0%, half a percentage point higher than at the start of the year.

The two largest cities in Ontario—Toronto and Ottawa—saw the greatest gains. Compared with the year before, an additional 119,000 people worked in Toronto, an increase of 5%. In Ottawa, 22,000 more people were employed—a growth rate of 4%. The gain in manufacturing contributed strongly to the growth in these two cities, as it did in communities like Windsor, St. Catharines-Niagara, Kitchener-Waterloo and London.

Slower growth in Quebec but low unemployment

Following three years of gains averaging 3%, employment growth in Quebec slowed in 2000. Compared with the start of the year, 26,000 (1%) more people were employed in December, just enough to keep pace with population growth. Unemployment remained at historically low levels. By the end of the year, the unemployment rate had slipped to 8.0%, for the first time since early 1976 (Chart Q).

Gains in Vancouver pushed B.C. employment upwards

The next most populous province, British Columbia, saw a 2% increase in employment. By the end of the year, some 44,000 more people were working, pushing the employment rate up 0.6 percentage points to 60.6% and pulling the unemployment rate down to 7.1% from 7.8% at the end of 1999.

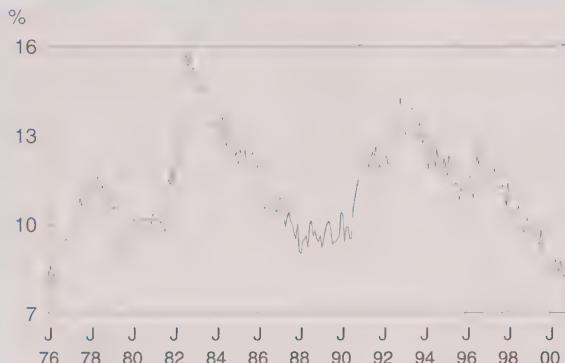
The strength of the British Columbia labour market was a reflection of improvements in Vancouver. Increased food and accommodation, and information, culture and recreation work helped lower the unemployment rate to

Table 2: Employment in 2000

	Annual average	Change from 1999		Change from December 1999	
		'000	%	'000	'000
Canada	14,909.7	378.5	2.6	15,066.7	319.2
Newfoundland	204.5	-0.4	-0.2	204.7	-6.5
Prince Edward Island	64.5	3.2	5.2	65.3	1.6
Nova Scotia	419.5	10.9	2.7	425.6	11.7
New Brunswick	334.4	6.0	1.8	338.3	8.9
Quebec	3,437.7	80.3	2.4	3,451.4	25.8
Ontario	5,872.1	184.0	3.2	5,960.4	186.4
Manitoba	554.4	11.7	2.2	556.3	10.3
Saskatchewan	485.0	4.9	1.0	479.2	-4.7
Alberta	1,588.2	34.9	2.2	1,613.0	41.3
British Columbia	1,949.1	42.7	2.2	1,972.5	44.3

Source: Labour Force Survey, seasonally adjusted December levels

Chart Q: For the first time in more than 20 years, the unemployment rate in Quebec dipped to 8.0%.



Source: Labour Force Survey, seasonally adjusted

5.8% by December, less than Toronto's (6.1%) or Montréal's (7.8%). Throughout the year, the employment rate rose in Vancouver, hitting 62.8% in December, 1.7 percentage points higher than at the start of the year (Chart R).

Continued growth in Alberta

Of all the provinces, Alberta has had the steadiest and most prolonged increase in employment. The year 2000 marked the eighth consecutive year of growth in

excess of 2%. By the end of the year, employment was up 41,000 (3%), owing to increases in accommodation and food, construction and manufacturing. This job growth pushed the unemployment rate to 4.8% by December, 0.6 percentage points lower than a year earlier.

While employment has increased in both Calgary and Edmonton in recent years, it has grown at a faster rate in Calgary. In the mid-1990s, more people worked in Edmonton; by 2000, some 58,000 (11%) more were working in Calgary. In the last six years, its largest gains have been in professional, scientific and technical services and manufacturing.

Stronger employment rate increase in Manitoba

With gains in manufacturing and information, culture and recreation, employment grew 10,000 (2%) in Manitoba in 2000. With working-age population growth of only 0.7% (almost half the national rate), the employment rate ended the year at 64.6%, an increase of 0.7 percentage points. At 4.9% in December, the low unemployment rate in Manitoba was second only to that of Alberta.

Agriculture led the employment loss in Saskatchewan

For the second consecutive year, farm employment fell in Saskatchewan (Chart S). In 2000, however, the decline of 13,000 (almost 19%) was much larger. One

Chart R: Vancouver's employment rate rose almost two percentage points in 2000.



Source: Labour Force Survey, seasonally adjusted

Chart S: Farm work in Saskatchewan slid, pulling down overall employment.



Source: Labour Force Survey, seasonally adjusted

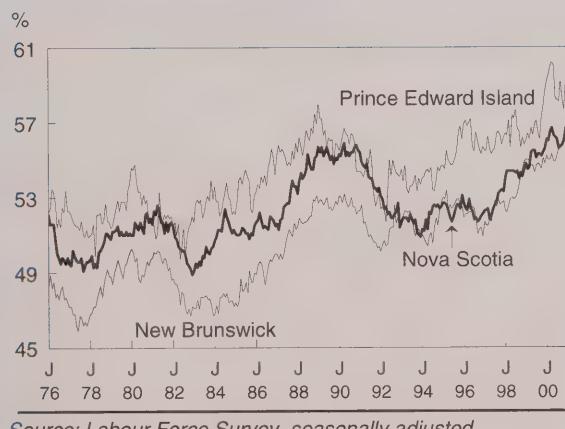
in 10 employed people in Saskatchewan worked on a farm, more than any other province. Therefore, with the decline in agriculture, it is no surprise that overall employment in the province dipped by 5,000 (1%).

Growth continued in the Maritimes

In Nova Scotia, New Brunswick and Prince Edward Island, job growth was above 2.5%. By the end of the year, the proportion of the population with a job was 59.3% in Prince Edward Island, 56.7% in Nova Scotia and 55.9% in New Brunswick. While still low relative to the rest of the country, employment rates in each of these provinces hit all-time highs in 2000 (Chart T).

Newfoundland was the only province in the East where employment fell. Compared with the end of 1999, some 7,000 fewer people were working in Newfoundland, a decline of 3%. The loss in 2000, however, came on the heels of strong growth in the previous three years. Since 1996, when employment began to increase at the national level, employment in Newfoundland has increased by 10.9%, not far behind the 11.5% growth nationally.

Chart T: Employment rates in the Maritimes reached all-time highs in 2000.



Notes

1 Employment actually fell in January 1998 but this was a non-economic, temporary downturn brought on by the ice storm that hit western Quebec and eastern Ontario.

2 A recent study noted that employment in the gambling industry has been increasing for a number of years (Marshall, 2000).

3 Longer-term trends could not be compared in this section. Owing to changes in occupation coding, the Labour Force Survey data from June 1999 onward are not comparable with prior data.

4 Human Resources Development Canada (HRDC) has assigned a skill level to each detailed occupation within its National Occupational Classification System (NOC). By linking the NOC code with the Standard Occupational Classification code used by Statistics Canada, one can tabulate LFS data according to skill level. For more information on the NOC and HRDC skill levels, see www.hrdc-drhc.gc.ca, then "National Occupational Classification."

5 Class of worker refers only to a person's main job.

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Part-time by choice

Katherine Marshall

Over the past three decades part-time employment has grown steadily. With almost one in five workers putting in less than 30 hours per week at his or her main job, part-time labour has become a major form of non-standard work. As a consequence, ongoing issues surrounding part-time work, such as job quality, security, pay, and benefits, have become more important than ever.

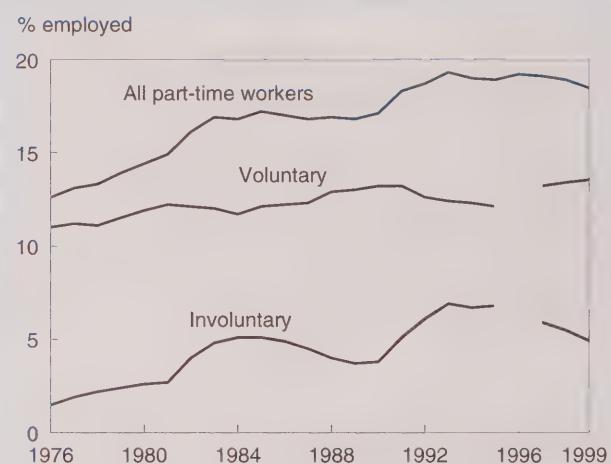
Although the part-time employment rate decreased slightly in the late 1990s, the proportion of part-timers who willingly engaged in such work and did not want full-time work, increased. Consequently, the proportion of involuntary part-time workers—those who would prefer full-time work—has decreased (Akyeampong, forthcoming). This study looks at those who voluntarily work part time, as well as their reasons for doing so, their levels of work-related stress, and their job characteristics (see *Data sources and definitions*). Comparisons are made with full-time and involuntary part-time workers. The article begins with an overview of the growth in part-time work.

An upward trend

The percentage of workers employed part time grew from 12.6% (1.2 million) in 1976 to 18.5% (2.7 million) in 1999 (Chart A). This trend is not unique to Canada, as part-time work has increased in most industrialized countries (see *International comparisons*). One-third of the net increase in the part-time employment rate since the late 1980s can be attributed to employment increases in industries with already high rates of part-time work (see *Decomposing changes in part-time employment*). However, the more important factor has been an overall trend toward increased part-time work across all industries.

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Chart A: Throughout the 1990s, almost one in five worked part time.



Source: Labour Force Survey

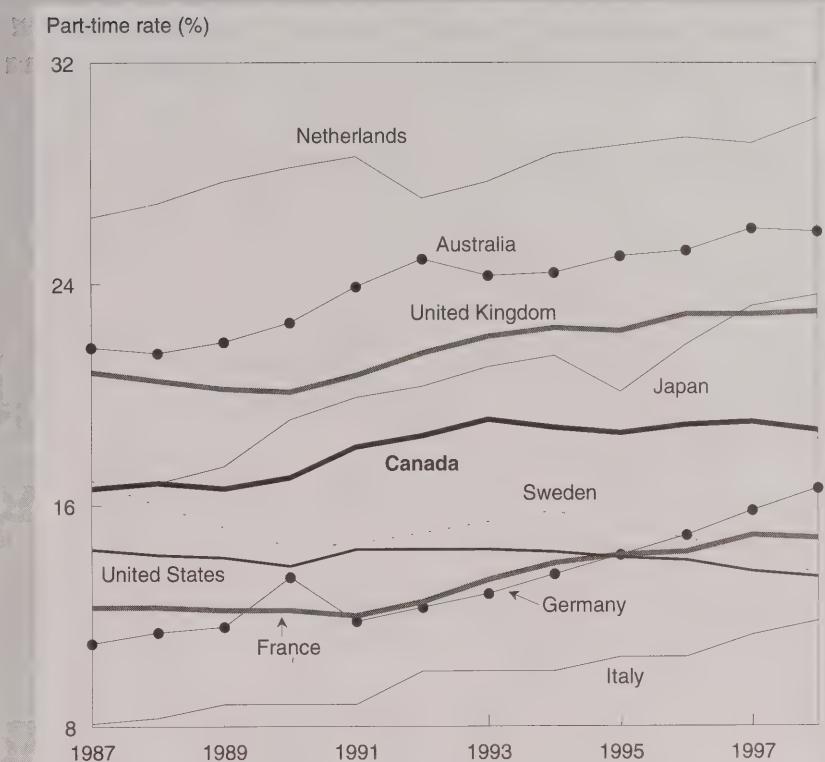
Note: Prior to 1996, the voluntary and involuntary part-time rates were based on the old definition of part-time workers (see *Data sources and definitions*).

A number of well-known, sometimes interrelated, factors are thought to be behind the widespread increase in the use of part-time work. One is the development of a more globally competitive service-based economy. Since the evolving economy has brought technological change to the workplace, extended operating and production schedules, and increased fluctuations in business activities, firms have been inclined to use more part-time labour (Tilly, 1991). Employers have embraced a more contingent, flexible workforce for cost-saving reasons as well: "In a climate of increased competition, employers sought to reduce their labour costs and increase their workforce flexibility by decreasing their core full-time, permanent workers and hiring more workers on a part-time basis" (Schellenberg, 1997).

International comparisons

Given the growing importance of part-time work, the Organisation for Economic Co-operation and Development (OECD) has recently begun to provide international comparisons. It defines part-time workers as persons who usually work less than 30 hours per week in their main job (OECD, 1997). (This definition is similar to Canada's.)

Accordingly, from 1987 to 1998 part-time employment increased in 8 of 10 selected OECD countries. Only 2 countries showed a decrease: the United States (down from 14.4% to 13.4%) and Sweden (down from 16.9% to 13.5%). Part-time employment rates were particularly high in Australia, Japan, the Netherlands and the United Kingdom, where approximately one in four workers put in less than 30 hours per week in 1998. Relative to other OECD countries, at just under 20%, Canada's part-time employment rate was "middle-of-the-road."



Source: Organisation for Economic Co-operation and Development

Some of the increase in part-time employment may also have come from the supply side, as more workers are looking for flexibility and ways to balance their home and work lives. Indeed, the percentage of part-timers who have adopted this work arrangement voluntarily has recently increased, reaching 73% in 1999, up from 69% in 1997.¹

Finally, demographic change can also contribute, as proportional increases or decreases in populations with high part-time rates, such as youths, can affect overall part-time rates. Analysis of this factor actually shows a dampening effect on the part-time work rate (see *Decomposing changes in part-time employment*), offsetting the effects of industrial employment shifts and the overall trend toward part-time work.

Youths and women predominate in voluntary part-time work

The number of voluntary part-time workers reached 2 million in 1999, representing 14% of all employment and 73% of all part-time employment (Table 1). These

workers were most often aged 15 to 24 (40%) or women between 25 and 54 (40%). Respective figures for full-time workers were 10% and 33%. Youths and women aged 25 to 54 also made up the majority of involuntary part-time workers (73%). However, compared with their voluntary counterparts, involuntary part-time workers were more likely to be core-age adults (25 to 54)—65% versus 46%—attesting to their greater preference for full-time work.

The skewed demographic distribution of voluntary part-time workers is better understood when education and family characteristics are examined. For example, 81% of young voluntary part-time workers were attending school, compared with only 8% of youths working full time and 11% of youths working involuntarily at part-time jobs. This finding accords with the main reason given by both young men and women for working part time: roughly 90% of youths did so in order to attend school.

Table 1: Employment status by selected characteristics

	Total employed	Full-time	Part-time		
			Total	Voluntary	Involuntary
			'000		
Total	14,531	11,849	2,682	1,965	717
Both sexes	100	82	18	14	5
Men	100	90	10	7	3
Women	100	72	28	21	7
Characteristics					
Men	54	60	30	29	34
15 to 24	8	6	16	18	11
25 to 54	40	47	10	6	20
55 and over	6	7	5	5	3
Women	46	40	70	71	66
15 to 24	7	4	21	22	16
25 to 54	35	33	42	40	46
55 and over	4	3	7	9	4
Attends school*					
15 to 24	34	8	67	81	11
25 and over	3	2	6	7	3
Education					
15 to 24					
High school or less†	73	65	84	86	74
Postsecondary diploma	21	28	13	11	21
University degree	6	7	3	3	5
25 and over					
High school or less†	43	43	45	44	48
Postsecondary diploma	35	35	35	34	37
University degree	22	22	20	22	16
With children under 16 at home					
25 to 54**					
Men	43	44	30	27	32
Women	44	40	56	61	45

Source: Labour Force Survey, 1999

* Both full- and part-time attendance.

** Age group most likely to have dependent children.

† Includes some postsecondary education.

Consequently, since so many voluntary part-time workers are still young and attending school, their average level of education is lower than that of full-time or involuntary part-time workers. For example, 86% of voluntary part-time workers aged 15 to 24 in 1999 had a high school education or less, compared with only 65%

of full-time workers. However, once people reach age 25 and have completed most of their schooling, full-time and voluntary part-time workers have strikingly similar levels of education—higher than that of most involuntary part-time workers (22% were university graduates, versus 16%).

Roughly 4 out of 10 men and women with full-time jobs, aged 25 to 54, had at least one child under 16 at home. This is in stark contrast to voluntary part-time workers, in whose case 61% of women and only 27% of men had dependent children at home. These differing rates are not surprising, given that 35% of women voluntarily working part time reported doing so in order to care for their children. Only 4% of men gave this reason.

Reasons for choosing part-time over full-time

The Labour Force Survey asks all “voluntary part-time workers” the main reason for not wanting full-time work (see *Data sources and definitions*). The reasons given for choosing part-time work vary substantially by age. In 1999, most youths said school attendance was their main reason for working part time (92% of men and 86% of women), while older workers (aged 55 and over) stated personal preference (87% of men and 85% of women) (Chart B). Older workers choosing to work part time are most likely doing so to ease into retirement. On the other hand, 25-to-54 year-olds tended to report a variety of reasons, which differed by sex. Although personal preference for part-time work was the main reason for both men and women (44% and 45%, respectively), family responsibilities were almost as common a reason for women (44%) and going to school was a strong second for men (26%). Only 6% of women in this group were attending school.

Decomposing changes in part-time employment

The increase in the part-time employment rate can be attributed to shifts in industry or demographic structure and/or to a trend toward part-time labour as a work arrangement. Part-time work may be growing because industries that usually offer this option are growing more, or because all industries are seeing an increase. Or both explanations may be true. Shift-share analysis² can isolate each factor and thus determine its contribution to the overall increase in the part-time rate.³ Some 31% of the increase in part-time employment between 1987 and 1999 can be credited to a shift in employment toward industries with high rates of part-time employment: the service sector. However, most (69%) of the increase in the part-time employment rate can be attrib-

uted to an upward trend in part-time work overall. Indeed, all industries except agriculture, and health care and social assistance (both already having high part-time rates), showed an increase in part-time employment between 1987 and 1999.

Demographic shifts over the period had a dampening effect on the part-time employment rate, mainly because of the proportional decrease in the youth population. Had this not been the case, the part-time rate might have increased by as much as 2.6% (instead of 1.7%), owing to the growing trend to part-time work among both men and women (except women 25 to 54).

Factor	Part-time rate		Employment share*		Weighted part-time**		Part-time change 1987-1999		
	1987	1999	1987	1999	1987	1999	Total	Shift†	Trend††
Industry									
Agriculture	16.8	18.5	1.00	1.00	16.8	18.5	1.69(100%)	0.53(31%)	1.17(69%)
Other primary	23.3	21.4	0.04	0.03	0.90	0.61	-0.29	-0.23	-0.06
Utilities	4.0	5.0	0.02	0.02	0.10	0.09	-	-0.02	0.02
Construction	1.7	1.6	0.01	0.01	0.02	0.01	-	-0.05	0.08
Manufacturing	6.9	8.3	0.06	0.05	0.41	0.44	0.03	-0.05	0.05
Trade	3.4	3.7	0.17	0.15	0.56	0.56	-	-0.05	0.05
Transportation and warehousing	26.1	27.5	0.16	0.15	4.21	4.25	0.03	-0.18	0.21
Finance, insurance and real estate	9.7	11.6	0.05	0.05	0.50	0.60	0.09	-0.01	0.10
Professional, scientific and technical	12.5	14.8	0.06	0.06	0.77	0.88	0.11	-0.03	0.14
Management and administration	12.2	12.5	0.04	0.06	0.47	0.78	0.31	0.29	0.02
Educational services	25.4	26.3	0.02	0.03	0.55	0.92	0.37	0.34	0.02
Health care and social assistance	19.5	24.1	0.06	0.07	1.25	1.63	0.38	0.08	0.30
Information, culture and recreation	27.1	26.5	0.09	0.10	2.52	2.64	0.11	0.17	-0.05
Accommodation and food services	20.3	22.7	0.04	0.04	0.81	0.98	0.17	0.07	0.10
Other services	35.4	38.4	0.06	0.06	2.01	2.45	0.43	0.25	0.18
Public administration	23.7	24.4	0.05	0.05	1.21	1.21	-	-0.04	0.04
Age and sex									
Men 15 to 24	16.8	18.5	1.00	1.00	16.8	18.5	1.69(100%)	-0.92(-54%)	2.61(154%)
Men 25 to 54	28.1	37.6	0.11	0.08	3.06	2.95	-0.11	-0.99	0.88
Men 55 and over	3.0	4.4	0.39	0.40	1.18	1.78	0.59	0.02	0.57
Women 15 to 24	10.6	14.1	0.07	0.06	0.70	0.88	0.17	-0.06	0.23
Women 25 to 54	38.0	52.1	0.10	0.07	3.79	3.82	0.02	-1.19	1.22
Women 55 and over	23.1	22.2	0.30	0.35	6.84	7.69	0.85	1.14	-0.29

Source: Labour Force Survey

* Industry or demographic group employment divided by total employment.

** Part-time rate multiplied by employment share; represents the contribution of an industry or demographic group to part-time employment.

† Keeping the part-time rate constant, this represents the change in the part-time rate due to changes in the employment share of individual industries or demographic groups.

†† Keeping the employment share constant, this represents the change in the part-time rate due to changes in the part-time rate of individual industries or demographic groups.

Work stress

The 1998 General Social Survey on Time Use asked respondents a number of questions about their use of time in relation to paid work. Findings show that volume of work (part-time or full-time) goes a long way in explaining the differences in perception of work-related stress. Roughly 4 out of 10 full-time workers (men and women) said that work caused them stress, compared with just one out of 10 part-time workers. Furthermore, one-third of all full-time workers believed themselves to be "workaholics," compared with one-fifth of part-time workers. Women working part time were more likely to make this observation than men (24% versus 13%), and involuntary part-timers more so than voluntary (27% versus 17%). A greater proportion of women working part time were older and thus more likely to be married and have children, factors that tend to increase financial and time-related pressures.

The majority of full-time workers were satisfied with the balance between their job and home life: 74% of men and 70% of women. Not surprisingly, working part time increased the degree of satisfaction, with 91% of men and 80% of women reporting contentment with the balance between home and work.

Perceptions of time use and stress as they relate to work

	Total employed	Full-time	Part-time				
			Total	Voluntary	Involuntary		
%							
Answered YES							
Does work cause you stress?							
Both sexes	36	42	10	8 ^a	15 ^a		
Men	37	41	--	--	--		
Women	35	43	13	11 ^a	17 ^a		
Are you a workaholic?							
Both sexes	32	34	20	17	27		
Men	33	35	13 ^a	10 ^a	--		
Women	30	33	24	22	27		
Are you satisfied with the balance between job and home?							
Both sexes	74	72	83	84	80		
Men	76	74	90	91	84		
Women	72	70	79	80	79		

Source: General Social Survey, 1998

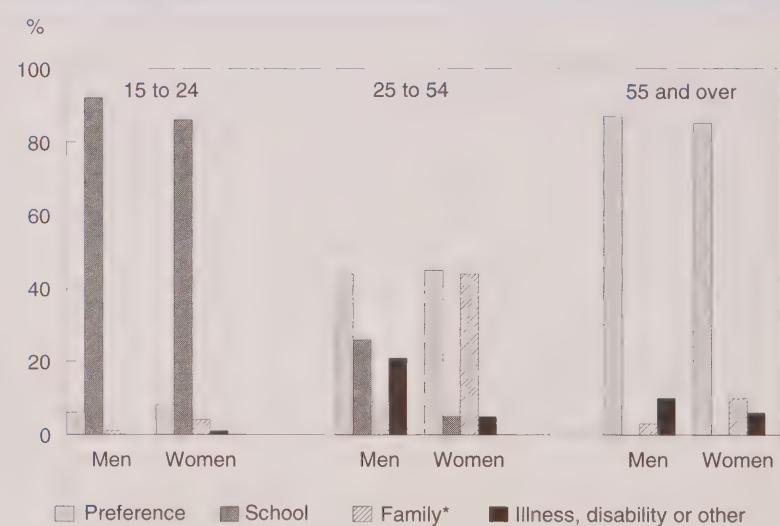
^a Estimates of the standard error are relatively high; these figures should be used with caution.

Job security and earnings: voluntary part-timers in the middle

In terms of holding down more than one job, voluntary part-time workers in 1999 had a rate closer to that of full-time workers (8% versus 4%) than to that of involuntary part-time workers (14%) (Table 2). This is a reasonable finding given that the latter would prefer to have full-time work, and multiple jobholding brings them closer to that goal.

Self-employment was much more common among voluntary part-time workers (29% of those 25 and over) than among either full-time (18%) or involuntary part-time workers (20%). The desire to work part time may be one reason

Chart B: Reasons for choosing part-time work vary by age.



Source: Labour Force Survey, 1999

* Caring for own children and/or elderly relative(s), or other family-related reasons.

some people move into self-employment, as it allows greater flexibility and control over work hours.

Half of all part-time jobs, both voluntary and involuntary, were in sales and service, compared with only 19% of full-time jobs. (Sales

and service positions are often scheduled outside 9-to-5 hours, thus creating a need for more short-hour work schedules.) On the other hand, 11% of full-time employment was found in management occupations, compared with just 3% of part-time work.

Rates of unionization and job permanence were higher for older than younger workers, as were those for full-time workers. For example, 36% of full-time workers aged 25 and over were in a unionized job, compared with 31% of voluntary and 34% of involuntary part-time workers. Proportions of workers with permanent jobs were more varied: 93% of full-time workers, 86% of voluntary and 74% of involuntary part-time workers. Similarly, average hourly earnings were highest for full-time workers aged 25 and over (\$16.01), second highest for voluntary part-time workers (\$14.48), and lowest for involuntary part-time workers (\$11.99). Not only were job security and wage rates higher for voluntary (compared with involuntary) part-time workers, but work-related stress tended to be lower for this group (see *Work stress*).

Summary

The growth in part-time work has made it an important factor in the workplace. In 1999, almost one in five workers spent less than 30 hours per week at his or her main job. Furthermore, whether out of personal choice or to accommodate personal circumstances, such as the wish to attend school or to care for young children, 73% of part-time workers would rather have been engaged part time than full time. Although voluntary part-time workers fare better than their involuntary counterparts, their wages and job security are still below those of full-time workers.

Perspectives

Table 2: Employment status by selected job characteristics

	Total employed	Full-time	Part-time		
			Total	Voluntary	Involuntary
			'000		
Total employed	14,531	11,849	2,682	1,965	717
Multiple jobholder					
15 to 24	5	4	10	8	14
25 and over	6	5	8	7	14
Self-employed					
15 to 24	5	4	10	9	14
25 and over	19	18	26	29	20
Occupation					
Management	10	11	3	3	2
Business, finance and administration	18	18	17	18	13
Health	5	5	8	7	9
Sales and service	25	19	48	48	50
Trades, transport and equipment operators	14	16	6	4	9
All other groups	28	31	18	20	17
Paid workers	12,068	9,918	2,150	1,547	603
Unionized*					
15 to 24	32	34	23	21	28
25 and over	13	15	11	10	18
Permanent job					
15 to 24	88	91	73	75	69
25 and over	72	77	65	65	64
Workplace < 20 employees					
15 to 24	91	93	82	86	74
Average hourly earnings	16.14	17.16	11.44	11.58	11.10
15 to 24	9.29	10.30	7.98	7.83	8.54
25 and over	15.52	16.01	13.74	14.48	11.99

Source: Labour Force Survey, 1999

* Includes both union members and persons who are not union members, but whose jobs are covered by collective agreements.

Data sources and definitions

The **Labour Force Survey (LFS)** is a monthly household survey that collects information on labour market activity from all persons 15 years and over, including questions about the usual and actual weekly hours a person contributes to his or her main, and any other, job.

The core content of the 1998 **General Social Survey (GSS)** was time use. From January to December, roughly 11,000 respondents were asked a number of questions relating to time use. The questionnaire included a time-use diary, a child-care diary for respondents with children under 15 at home, a section on perceptions of time, and one on unpaid help and volunteering. For more information on this cycle of the GSS, contact Manon DeClos at (613) 951-9298.

Labour force statistics from the **Organisation for Economic Co-operation and Development (OECD)** come from its annual questionnaire, and from a number of national sources such as yearbooks. The OECD also uses data from the Statistical Office of the European Union (Eurostat) and the International Labour Office (ILO).

Usual hours: the number of paid hours an employee usually works per week. For the self-employed, it refers to the number of hours usually worked in a typical week, regardless of whether they were paid.

Part-time employment: persons who usually work less than 30 hours per week at their main or only job. Prior to 1996, part-time work was based on the total hours of all jobs. The revised definition increased the total number of part-time workers. The historical data of the LFS have been revised to reflect the current definition. However, the full-time workers who were reclassified to part-time had not been asked the reason for working part time. Therefore, the voluntary and involuntary part-time rates prior to 1996 are based on the old definition of part-time workers.

Voluntary part-time employment: persons who usually work less than 30 hours per week, and who state they do not want to work full time. These workers are then asked the main reason for not wanting full-time work. This could be own illness or disability, caring for own children, caring for elderly relative(s), other personal or family responsibilities, going to school, personal preference, or other.

The label of "voluntary" part-time worker can be ambiguous. Although everyone in this category has made the decision to work part time, less than half cite personal preference for this arrangement. In most cases respondents give personal circumstances, such as care of children or going to school, as the reason for "choosing" to work part time. Some may feel that part-time work is not an ideal arrangement but the only option given their life circumstances, while others may view it as preferable, despite having chosen it for other reasons.

Overall, the "personal preference" category made the largest gain over three years—up from 34% in 1997 to 36% in 1999. The largest increase was among the 25-to-54 age group, up from 42% to 45%. The growth in part-time as a preferred work arrangement is probably the main reason for the overall increase in the voluntary part-time employment rate.

Involuntary part-time employment: persons who usually work less than 30 hours per week but state they would prefer to work full time. These workers are asked the main reason for not having full-time work, and whether or not they have searched for full-time work (Akyeampong, forthcoming).

■ Notes

1 Prior to 1996, the voluntary and involuntary part-time rates were based on the old definition of part-time workers (see *Data sources and definitions*).

2 In simplified terms, the shift-share technique estimates the increase in the part-time work rate by separately holding each factor constant over the time period. For example, if the employment distribution by industry had remained the same from 1987 to 1999, what would changes to the part-time rate have been, and similarly, if the part-time rate had been constant over the time period, what would the altered employment levels have done to the part-time rate?

3 The two factors, employment share and trend to work part time, are decomposed and expressed in the following formula:

$$m^{t+1} - m^t = \sum_i \left[\frac{(s_i^t + s_i^{t+1})}{2} \cdot (m_i^{t+1} + m_i^t) \right]$$

$$+ \sum_i \left[\frac{(m_i^t + m_i^{t+1})}{2} \cdot (s_i^{t+1} + s_i^t) \right]$$

m^t = part-time employment rate for all industries or age groups at time t (1987)

m_i^t = part-time employment rate in industry i or age group i at time t

s_i^t = total employment in industry or age group i at time t, as a proportion of total employment

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Tilly, C. "Reasons for the continuing growth of part-time employment." *Monthly Labor Review* (March 1991): 10-18.

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Demography and the labour market

Deborah Sunter

Essentially, Canada's population began aging in the 1920s. The baby boom temporarily and dramatically warded off the effect of a growing ratio of retirees to workers. It also interacted with the economy for 50 years, in ways difficult to untangle, and will continue to assert an influence for many years to come (see *The power of demographics*).

Over the next half century, growth in the ratio of retirees to workers will put unprecedented stress on social security programs such as the Canada and Quebec Pension Plans (C/QPP), as well as other social programs and institutions such as the health care system. Exactly what that ratio will be is a topic of great interest to those who administer these programs.

Much of the future shape of the population is already determined (Légaré, 2000). To a large extent, this also gives the limits of labour force activity in the future, since demographic composition plays a key role in determining overall participation rates. Factors affecting age-specific participation are more complex and more subject to change, and must, therefore, be based on informed assumptions about future trends in economic growth, institutional change and labour market behaviour.

The 1990s disruption of long-term trends in labour force participation signals the uncertainty of any projection based on recent behaviour. In fact, the deviation from trend was the subject of considerable investigation by many economists in the latter half of the 1990s. The main inquiry concerned the extent to which the collapse in the long-term growth in labour force participation resulted from economic conditions (weak demand) or from more permanent structural change.

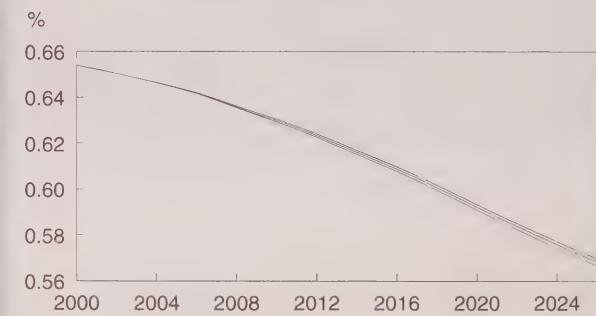
Based on a paper prepared for the Seminar on Demographic and Economic Perspectives from 2000 to 2050. Deborah Sunter is Director of the Labour Statistics Division. She can be reached at (613) 951-4740 or deborah.sunter@statcan.ca.

The power of demographics

The proportion of the population in the labour force is determined by the interplay of many factors, but the main influence is the shape of the population pyramid: the relative share of the various age groups by sex. For example, the likelihood of entering or remaining in the labour market varies considerably over a person's life. To this end, it is useful to have a sense of the potential effect of aging on the overall rate over the next 25 years (based on current labour force behaviour).

Statistics Canada produces four alternative population projections, each broken down by five-year age groups. However, the choice makes little difference to this exercise. No matter which projection is used, the general story is the same: given current age-sex participation rates, the changing demographic structure of the population will put considerable downward pressure on the overall participation rate over the next quarter century. All else being equal, the rate will drop from about 65% in 2000, to about 63% in 2010. By 2020, the rate will be below 60% and will fall even more quickly to about 57% by 2025.

Regardless of population projection, overall participation declines.



Source: Demography Division

Note: The projections include the population in the territories, on reserves and in institutions, while the current participation rates used in the calculations do not. This is not likely to change the downward trend to any significant extent, however. The intent is to illustrate, not to forecast.

Of course, labour force participation is just part of the analysis needed to understand the future interaction between demographic change and the labour market and its effect on social security programs. Also important are the annual and lifetime earnings of workers, which are affected by changes in job security, volume of work and earnings distributions.

This article begins with a brief look at the 1990s; using data from the Labour Force Survey (LFS), it asks how the 1990s deviated from previous decades, and whether these changes are likely to persist. The analysis leans heavily on a recent work that addresses these questions in detail (Picot and Heisz, 2000).

Much of the remaining analysis—drawing on a considerable body of literature—concerns changes in labour market behaviour, and participation rates in particular, among specific age-sex groups. Participation rates are used as a rough proxy for earnings potential. Where important, more specific information on earnings behaviour is explored.

Finally, some new data that provide a longitudinal perspective (from the Survey of Labour and Income Dynamics [SLID]) are briefly explored (see *Data sources*). While much work remains to be done, these new data sets will provide a fuller picture of labour market behaviour over time. This will allow the testing of hypotheses that currently rest on synthetic cohort analysis.¹

Data sources

The Labour Force Survey is a monthly household survey of a sample of over 50,000 households representative of the civilian, non-institutionalized population 15 years or older in the 10 provinces. It collects data on the labour market activities and demographic characteristics of the working-age population of Canada and provides estimates of the number and characteristics of the employed, the unemployed, and persons not in the labour force.

The Survey of Labour and Income Dynamics is an annual longitudinal household survey that began in January 1993. Respondents enter the survey and remain for six years, completing two detailed questionnaires each year, one on labour market activity and the other on income. The same people are interviewed in successive years to capture transitions in the nation's labour market and other changes experienced by individuals and families.

The recent labour market

The 1990s proved a decade of turbulence and change in the labour market. During the early years of the decade, some expectations were shattered, and a number of new impressions or expectations were formed, correctly or incorrectly. Perhaps the most apocalyptic was that espoused by Jeremy Rifkin (1995), who prophesied that, as a result of globalization and technology, fewer people would be required in the production process, leading to “the end of work” (at least to some extent). Others had more moderate views, but expected a reduction in overall labour demand and a shift in demand for certain types of workers. They assumed that employers would attempt to stem increased costs through the use of technology as a labour replacement, gain more flexibility through the use of just-in-time or contingent workers, and favour the hiring of the highly skilled. The result for workers would be rising job instability, polarized opportunities and growing earnings inequality.

With hindsight, it is probably fair to say that impressions and expectations of change far exceeded reality. But change there has undoubtedly been. For most of the 1990s, labour demand was weak. On the supply side, participation rates plunged but human capital increased. Important institutional changes, such as the reform of the employment insurance system, were also implemented. However, in contrast to the assertions of observers like Rifkin, other analysts found little evidence that technology and globalization were the driving forces.

The single most important factor influencing the labour market over most of the decade appears to have been relatively weak aggregate demand (Picot and Heisz, 2000; Fortin and Fortin, 1999; Ip, King and Verdier, 1999) (Chart A). This had a negative effect on job creation and participation rates, particularly for youths and older men.

The slow, almost non-existent, recovery gave way to a significant shift in the types of jobs created. By 1997, almost all net employment growth since 1989 was in the form of self-employment (Chart B) or part-time paid work. Furthermore, unlike most of the growth in self-employment in the 1980s, which had been among employers (who created jobs for others as well), almost all of the increase in the 1990s was own-account (Statistics Canada, 1997).

Chart A: A weaker economy in the 1990s hampered employment growth.



Sources: System of National Accounts; Labour Force Survey

In addition, because Canada's growth in self-employment was not mirrored in the United States, it was interpreted by many as a further sign of weakness in the economy. In effect, it was thought to be a substitute for unemployment, although recent analysis shows little evidence that self-employment grows more strongly during recession and weak recovery than during periods of expansion (Lin, Yates and Picot, 1999). Other factors, such as income tax advantages for the self-employed and increasing payroll taxes, were thought to play a role.

Chart B: Self-employment dominated job growth through much of the 1990s.



Source: Labour Force Survey

Certainly, more analysis is needed to understand the factors behind self-employment growth in the 1990s, especially in view of the abrupt downturn of this phenomenon at the end of the decade. Similarly, part-time work as a share of total employment levelled off over the same period—underlining the difficulty of forecasting labour market trends.

Mixed signals were also seen with respect to changes in job stability. Contrary to popular belief, the risk of permanent layoff in the 1980s and early 1990s was virtually identical. As measured by job duration, job stability actually increased. Only the least educated did not experience increases in job tenure. Part of the rise in job stability, however, was caused by a decline in quit rates, perhaps a reflection of the extent to which people felt insecure, and a reaction to the depressed hiring rates that prevailed through most of the 1990s (Heisz and Côté, 1998).

The lack of progress in earnings for many workers may also have increased the sense of insecurity. Overall wage growth in the 1990s was nonexistent, as wage increases for women were offset by declines among men. Notable declines were also observed in the real earnings of recent labour market entrants, particularly of young men and recent male immigrants, which may presage an enduring downward shift in their lifetime earnings (Picot and Heisz, 2000).

Despite the difficult labour market conditions marking most of the decade, women continued to make gains, although at a slower pace: both participation and employment rates continued to rise for adult (25 and over) women, and their unemployment rate fell to the same level as that of men. This was due, in part, to the continued advancement in women's educational attainment, and to a shift into less traditional industries and occupations. The deterioration in conditions for men, especially younger men, is not as easily explained. Supply side shifts may be part of the answer. The educational advantage once held by young male workers relative to young women and adult workers largely disappeared in the 1990s (Kapsalis, Morissette and Picot, 1999).

After almost half a century of growth, participation declined

The labour force participation rate fell sharply among youths, stalled for women, and continued to edge down for older (55 and over) men through most of

Table 1: Participation rate by age and sex

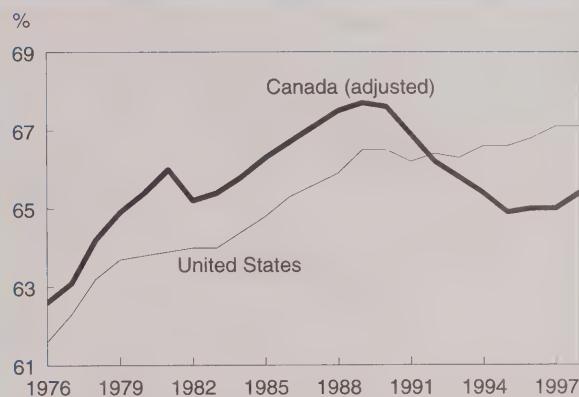
	1989	1992	1995	1998	2000
	%				
Men	76.7	73.8	72.5	72.1	72.5
15 - 19	60.9	53.8	50.3	48.3	51.8
20 - 24	85.0	80.9	79.3	78.8	79.9
25 - 29	93.0	90.6	89.7	90.9	90.5
30 - 34	94.6	91.9	91.9	92.8	92.7
35 - 39	94.2	92.6	92.4	92.9	92.6
40 - 44	94.7	92.7	92.0	91.9	92.3
45 - 49	93.5	91.6	91.2	90.7	91.2
50 - 54	89.2	87.5	87.0	85.6	86.5
55 - 59	77.8	74.0	72.4	70.6	72.9
60 - 64	51.6	48.2	43.8	44.7	46.1
65 - 69	16.4	17.7	16.9	17.7	16.1
70 +	6.7	6.3	6.2	6.1	6.1
Women	58.0	57.8	57.5	58.4	59.5
15 - 19	57.3	52.4	49.4	47.8	51.8
20 - 24	78.2	75.9	73.3	72.7	73.9
25 - 29	77.1	76.6	76.3	79.5	79.9
30 - 34	74.8	75.5	76.0	77.9	79.5
35 - 39	77.2	76.9	77.4	78.8	79.5
40 - 44	76.8	78.1	79.0	79.7	80.9
45 - 49	71.5	75.3	76.3	78.6	79.4
50 - 54	62.2	65.0	66.1	69.0	71.0
55 - 59	44.8	47.7	48.2	50.1	53.4
60 - 64	22.6	23.4	23.6	25.2	27.2
65 - 69	7.3	7.5	7.4	7.4	7.3
70 +	2.3	1.5	1.6	1.9	1.8

Source: Labour Force Survey

the 1990s (Table 1). As a result, the overall participation rate dropped, after almost half a century of upward movement. This departure from long-term trend was the subject of much investigation and discussion in the mid- and late 1990s, especially since the same phenomenon did not occur in the United States (Chart C).

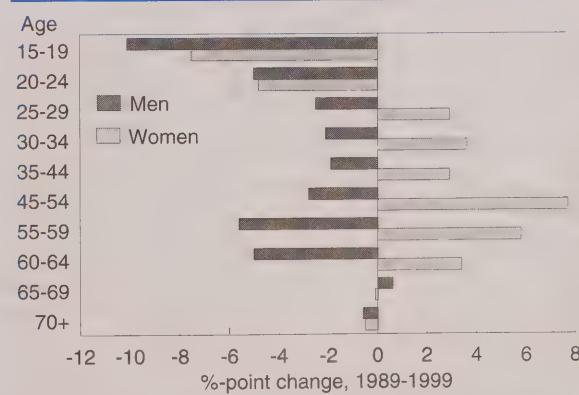
Not all demographic groups contributed equally to the decline in the labour force between 1989 and 1997. When the population is divided into 5- or 10-year age groups by sex, differences emerge. For men, all age groups except 65-to-69 year-olds experienced a decline. For women, declines were notable only among teenagers and 20-to-24 year-olds (Chart D).

These data, however, cannot provide a measure of the importance of these demographic trends in the overall decline in the participation rate. With the population structure held constant at 1989 shares, the contribution of each group can be calculated. Two-thirds of the overall decline came from the youth group (36.5% from men and 31.1% from women). Older

Chart C: Canadian and U.S. participation rates diverged in the 1990s.

Sources: Labour Force Survey; U.S. Current Population Survey

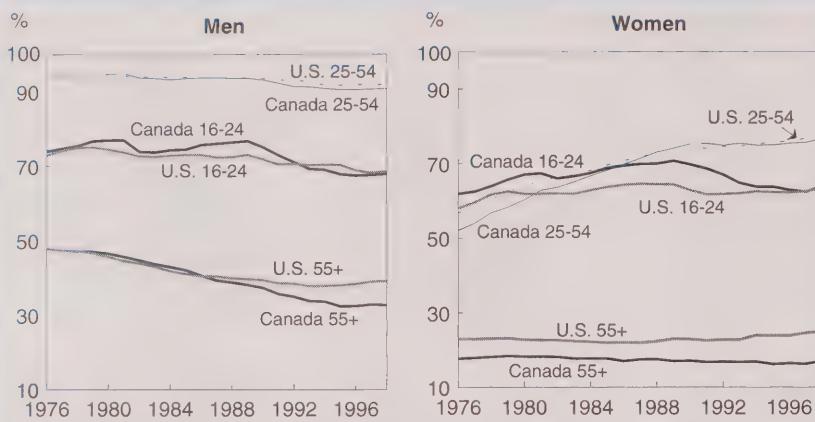
men (55 and over) accounted for a further 21.3%, and older women, 3.2%. Among 25-to-54 year-olds, however, the story was dramatically different by sex. Core-age men accounted for 28.2% of the overall decline, while core-age women actually experienced modest growth in their labour force participation (Sharpe and Grignon, 1999).

Chart D: The drop in labour force participation differed markedly by age and sex.

Source: Labour Force Survey

Just as most of the decline in the Canadian participation rate in the 1990s was led by youths and those 55 and over (Chart E), these same groups accounted for almost all of the growth in the gap between Canadian and American participation rates.

Chart E: The increased gap between Canadian and U.S. participation rates was attributable to youths and older workers.



Sources: Labour Force Survey; U.S. Current Population Survey

Causes and implications of changes in labour force behaviour

Weak aggregate demand is generally viewed as a major contributor to the drop in labour force participation. But this was by no means the only factor in the 1990s. Demographic composition was also important, as were increased school attendance, changes in the Employment Insurance (EI) program, the effect of pensions, and government downsizing, among others.

Youths

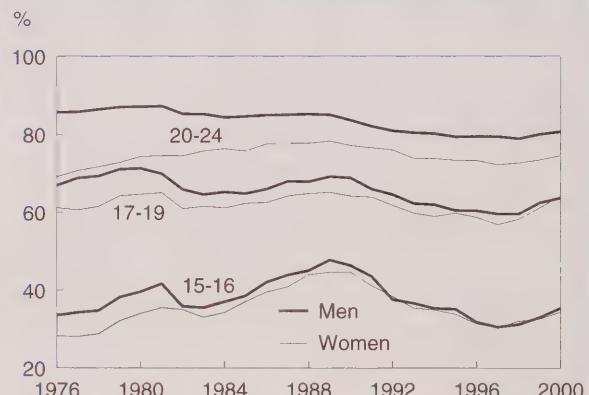
Youths accounted for two-thirds of the overall decline in the labour force between 1989 and 1997, mainly because of their greater susceptibility to the negative effects of cyclical downturns and their higher school attendance rates. The latter accounted for about 52% of the overall decline in youth participation rates during this period. By the end of the 1990s, labour market conditions were finally improving for young people, but their participation rates had not fully recovered (Chart F).

In addition to difficult economic conditions and increased school attendance, change in the age composition of the youth group accounted for 14% of the drop in their participation rate (Statistics Canada, 1999). Because young people's participation increases strongly with age, composition of this group is important. The population of 15-to-16 year-olds grew throughout the 1990s. That of the 17-to-19 year-old

group continued the long-term decline that began at the end of the 1970s, until 1992, when their numbers started to increase. In contrast, the number of 20-to-24 year-olds—the group most likely to participate in the labour force—continued to decline until 1996 (Chart G).

Staying in school longer lowers current participation rates but increases working-life expectancy after age 25. School attendance rates rose steadily through most of the decade, rising from 41% in 1979, to 51% in 1989 and 61% in 1998. Again, the age structure of the youth population had an effect,

Chart F: Despite an improving labour market, youth participation was stagnant.



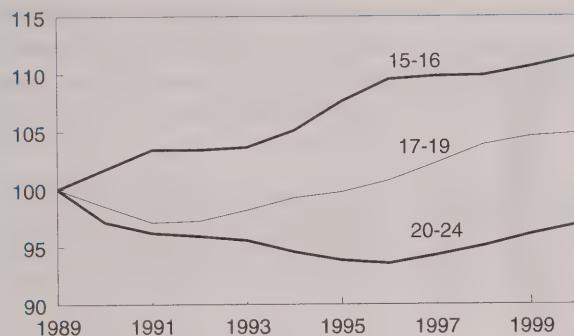
Source: Labour Force Survey

accounting for about 2 percentage points of the increase in attendance rates in the 1990s. However, most of the increase reflects a growing tendency for youths to stay in school longer.

In particular, the number of youths in college and university continued to increase in the first few years of the 1990s. Compared with 1989, college attendance rates were 24% higher at the end of the 1990s; university attendance, 15% higher. However, the

Chart G: Youth participation rates are affected by differing population growth rates.

Population growth (1989=100)



Source: Labour Force Survey

growth in the latter was concentrated in the early years of the decade, with little change in the later years.

This levelling-off probably reflects a combination of factors, such as improved labour market conditions and higher tuition fees. The enrolment capacity of postsecondary institutions may also have affected attendance rates (Lemieux, Beaudry and Parent, 2000). If this is the case, the educational system's ability to respond to demand may also be a factor in the long-term school and work activity of youths. Whatever the causes, the significant downward shift in labour force participation is generally thought to be largely structural and likely to last well into the future (Picot, Heisz and Nakamura, 2000; Archambault and Grignon, 1999).

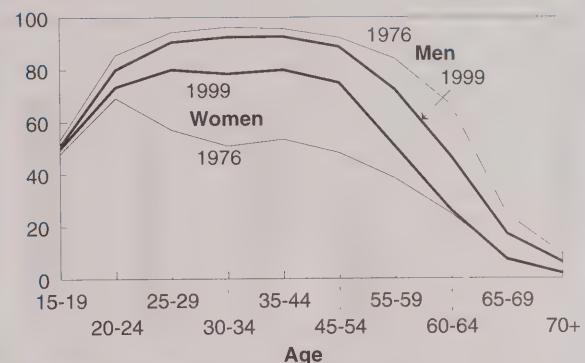
Adult women

The most important factor behind the rise in total labour force participation over the last 50 years was the dramatic increase among adult women. In the 1970s and 1980s, each successive cohort of women spent more time in the labour force. This, coupled with the size of these baby boom cohorts, pushed up cross-sectional participation rates dramatically.

This spectacular rise, in conjunction with a moderate decline among men, narrowed the male-female gap in the rates, from 61 percentage points in 1950 to 32 in 1976 and 14 in 1999. The participation rate profile of women has now taken on roughly the same shape—"high and flat"—as that of men (Chart H).

Chart H: Women's pattern of participation by age has become closer to men's.

%



Source: Labour Force Survey

The apparent stagnation of women's labour force participation in the early 1990s and slow growth since then has led to speculation about women's integration into the labour market. One study suggests that large increases in women's labour force participation are a thing of the past (Beaudry and Lemieux, 1999). In more recent years, the rate of successive generations has become more similar, accounting for the slower growth of adult women's participation in the 1990s.

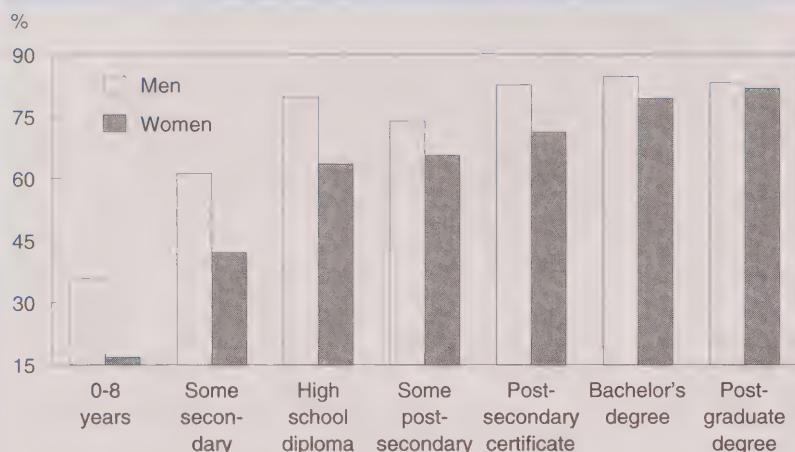
Limits to closing the gap

Women continue to increase their investment in education, which will probably strengthen their labour market attachment and push up participation rates both cross-sectionally and longitudinally (Chart I).

In 1996, some 12% of all working-age women had university degrees, compared with 14% of men. But this overall rate hides the effects of some important changes that have taken place. Among 20-to-24 year-olds, 13% of women had university degrees, compared with 9% of men in this age group. The proportion of 25-to-44 year-olds with a degree was the same for men and women. The big difference was among older cohorts, where degrees were much less common among women (Statistics Canada, 2000).

Women are now the majority (55% in 1997-98) in full-time university studies (56% among undergraduates and 51% among master's degree students, though

Chart I: At higher levels of education, women's and men's participation rates tend to converge.



Source: Labour Force Survey, 1999

only 43% among doctoral candidates). Women are also the majority in most fields of study except mathematics, sciences and applied sciences.

Of course, women's dominant role in the care of children and households will probably preclude a full closing of the participation rate gap. Even so, a recent study using longitudinal data from the Survey of Labour and Income Dynamics sheds new light on the strength of their attachment to the labour market in their childbearing years.

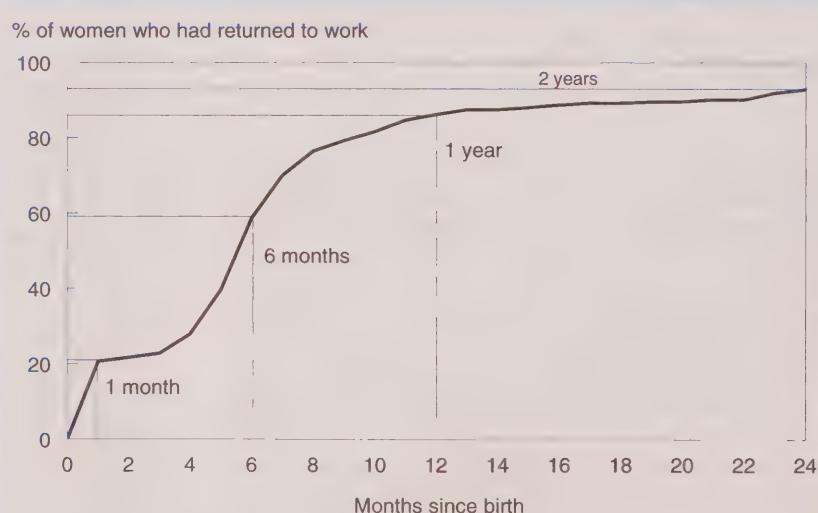
The vast majority of employed women return to the labour force relatively soon after childbirth. Of the 367,000 employed women who gave birth in 1993 or 1994, some 21% were back at work by the end of the first month after childbirth. Within a year, 86% had returned to work, and by two years, 93% had done so (Marshall, 1999) (Chart J).

did not receive maternity benefits were almost six times as likely to have returned to work by the end of the first month. For the self-employed, the odds of returning were almost eight times greater. This may reflect the lack of benefit coverage for this group and perhaps a greater control over working conditions.

Overall, for those who did return within two years, the average time off was 6.4 months. More than 8 in 10 (83%) returned to the same employer, and 9 in 10 to the same employment status (full- or part-time).

Virtually all those who took at least 6 months off received EI benefits, compared with only 40% of those who returned within a month. For those with coverage, recent changes in maternity benefits may further delay returning to work.

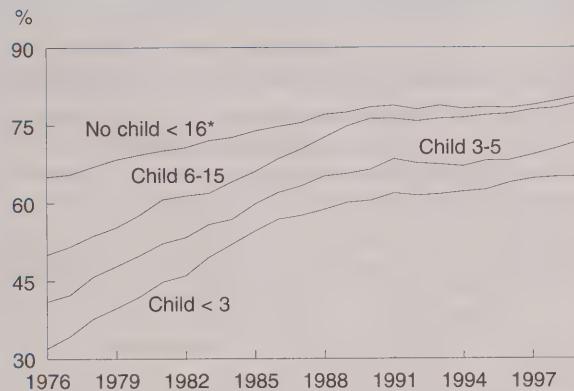
Chart J: The percentage of mothers who return to work rises rapidly for the first eight months after a birth.



Source: Survey of Labour and Income Dynamics, 1993-1996

These longitudinal data help explain the dynamics behind the trends in participation rates among mothers. Labour force participation of women with children, even of those with very young children, has increased dramatically. While their rates have risen overall, no matter the age of the youngest child, differences persist. But participation rates have almost converged between those with school-aged children (6 to 15) and those with children over 15 only or with no children at home (Chart K).

Chart K: Women's participation is influenced by age of youngest child at home.



Source: Labour Force Survey
* Women aged 15 - 54.

Not surprisingly, the study noted a higher gap for older workers, in part because of the cumulative effect of work experience on wages. The gap will probably narrow in the future, though, as higher education and stronger attachment to the labour market become more commonplace among older women.

This is consistent with other findings, based on longitudinal data from the National Graduates Survey (Finnie and Wannell, 1999). That study found a narrowing wage gap, especially among those with higher education. Indeed, by the doctoral level, no gap existed five years after graduation in 1990.

Men and women 55 and over

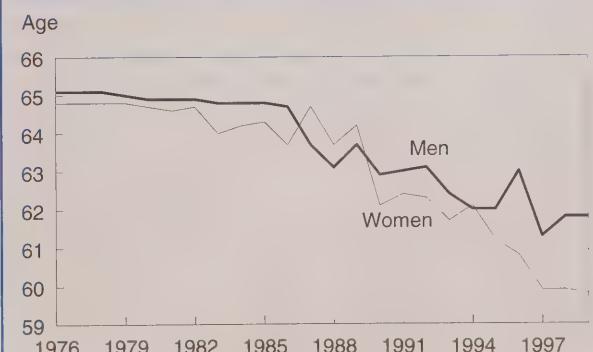
Although it varies greatly, the median age of retirement among men has been falling for several decades. It was close to 65 in the late 1970s and early 1980s. Between 1986 and 1993, it declined steadily. The drop between 1986 and 1987 is attributed largely to the 1987 lowering of the minimum age at which one could draw benefits from the C/QPP. The continued decline in the early 1990s is thought to reflect, at least to some extent, the difficult labour market conditions for older workers who had lost their jobs, and the use of early retirement as a workforce adjustment mechanism, particularly in the public sector. Over the last 20 years, women have tended to retire earlier than men but have followed the same downward trend in median retirement age (Chart L).

Relative earnings of women and men

Despite increasing attachment to the labour force, women are still much more likely than men to work part time. Their lower volume of work leads to lower annual earnings, which affects potential retirement income. In 1998, the female-to-male earnings ratio was 0.63 (that is, for every dollar earned by a man, 63 cents was earned by a woman). Limiting the comparison to full year full time workers removes much of the effect of working hours and raises the ratio to 0.72 (up from 0.58 in 1967). A comparison of hourly wages further controls for volume effects, nudging the ratio to 0.81.²

Why the persistent wage gap? A recent study concluded that women's shorter work histories played a significant role, as did job responsibilities, education and major field of study (Drolet, 1999). However, even after controlling for these and other factors, one finds a ratio of 0.85, leaving much of the wage gap still unexplained.

Chart L: The median age of retirement has declined steadily since the mid-1980s.



Source: Labour Force Survey

In the second half of the 1990s, the continued decline in retirement age attracted attention. Improved economic conditions and an end to government downsizing were expected to push the age of retirement back to pre-recession levels. This did not occur, however, and the trend did not even level off, let alone show signs of reversing, until almost the end of the decade.

Estimating the age of retirement is not straightforward. Retirement is not a singular concept, nor is it necessarily a permanent state. The measure used here is based on Labour Force Survey data and is at best a useful approximation (Gower, 1997). A more readily available and widely used indicator is the participation rate, although this can be misleading, especially for women.

Just as with retirement age, over the longer term the participation rates of older men have trended down, with a slight upturn in the last couple of years. However, for older women, the rate has actually been edging up steadily, despite the long-term decline in median retirement age (Chart M).

Chart M: Participation rates of older men and women have been converging.



Source: Labour Force Survey

To the extent that some of the decline in the 1990s was a cyclical phenomenon, improved conditions were expected to reverse the trend or at least halt the decline. In the United States, this reversal began in 1994; in Canada, it took until 1997 to appear.

For older women, participation rates will probably increase with time, as younger cohorts with strong labour force attachment replace the current cohorts

who never established such an attachment (Dugan and Robidoux, 1999). Older women in Canada may never match the historically higher rates of their American counterparts, however, which have probably been influenced by largely job-related medical benefits.

Factors that may influence trends in retirement

The rate of self-employment is among the many factors that may play a role in future trends in retirement age. Clear differences are apparent in median retirement age by class of worker. The self-employed, who tend to retire at an older age than paid workers, have been over-represented among those still working past the age of 64 (Chart N).

Chart N: The self-employed are more likely to continue working past age 64.

Median retirement age

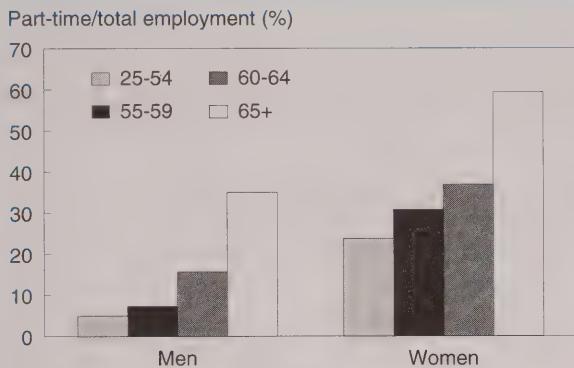


Source: Labour Force Survey

The opportunity to work part time at the end of a long career may benefit both workers and employers and result in delayed retirement. For whatever reason, it is clear that the incidence of part-time work rises with age for both male and female workers (Chart O).

Having a registered pension plan (RPP) also probably influences retirement age (Chart P). Overall RPP coverage appears to have been stable from the mid-1980s to the mid-1990s, but this was the result of a drop in the rate for men offset by an increase for women (Morissette and Drolet, 1999). Further decomposition shows a decline in coverage for young men (25 to 34), stability for young women and for men aged 35 to 54, and an increase among women in that age group.

Chart O: The incidence of part-time work rises by age for both sexes.

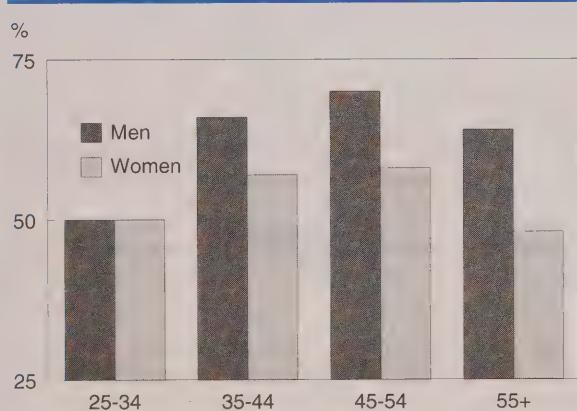


Source: Labour Force Survey, 1997

Most of the decline in young men's coverage was related to a drop in unionization and to employment shifts across industries. Most of the growth in older women's coverage was associated with the increased incidence of relatively well-paid jobs with a high likelihood of pension coverage.

The major unanswered questions are, to what extent does private pension plan coverage influence retirement age, and will the drop in coverage for younger men persist as they age into older cohorts?

Chart P: The proportion of employees with an RPP varies by age and sex.



Source: Survey of Work Arrangements, 1995

Activity patterns and working-life expectancy

Almost all analysis of this subject has been based on cross-sectional data or synthetic cohort analysis. This is helpful, but more information is needed on labour force activity patterns over time to fully appreciate changes in labour market behaviour and the factors affecting that behaviour.

The recent development of a number of longitudinal data sets by Statistics Canada will certainly help to fill this void. In particular, the Survey of Labour and Income Dynamics (SLID) holds the key to many of the interactions and cumulative behaviour patterns that help explain the effect of changing labour market behaviour on lifetime earnings and contributions to pension plans such as the C/QPP. As the survey panels build through time, more and more questions can be answered about labour market dynamics.

For example, information on activity patterns shows that while average monthly participation rates in 1997 were 72% (LFS data), 80% of the working-age population actually worked at some time during the year (SLID data) (Table 2). This suggests, for example, more contributors to the C/QPP than are apparent with only cross-sectional data. Much more sophisticated analysis is needed to estimate changing patterns in volume of work and pensionable earnings.

Table 2: Participation rate by age and sex, 1997

	LFS*	SLID**
Both sexes 16 - 69	72.4	79.6
Men	79.2	85.6
Women	65.7	73.5
16 - 24	65.6	79.3
Men	68.0	80.8
Women	63.1	77.8
25 - 54	83.9	89.3
Men	90.9	95.2
Women	76.9	83.5
55 - 69	37.2	43.9
Men	46.9	54.3
Women	28.0	33.9

Sources: Labour Force Survey and Survey of Labour and Income Dynamics

* Average of monthly participation rates.

** All those who participated in the labour force at some time during the year.

However, SLID and its forerunner, the Labour Market Activity Survey, have already helped demographers improve the measurement of expected working life. Life tables are widely used to summarize the mortality pattern of a population and to estimate average life expectancy. An extension of this concept is working-life tables, which are useful for analyzing average expected labour force activity and inactivity and for summarizing the long-term consequences of current labour force activity patterns (Bélanger and Larrivée, 1992).

Prior to the emergence of longitudinal data sets in the 1980s, working-life tables were constructed from cross-sectional data. They wrongly, but of necessity, assumed that people entered the labour force only once and remained active until retirement or death. The new data sources allow for transitions into and out of the labour force. This is clearly an improvement, but results are still only approximations of what would be obtained by direct retrospective or longitudinal measurement. What's more, they reflect current patterns of age-specific labour force transitions. In this sense, they are not forecasts, but simple projections of current behaviour given current age-specific demographics.

Nevertheless, the results are instructive. The ratio of inactive to active adult life has grown as a result of increased life expectancy. For example, in 1986 the average Canadian man could expect to spend about 33 more years in the labour force if he was active at age 25, and to have 16 years out of the labour force. The working-life expectancy for a woman in the labour market at age 25 was 26 years, with 30 years out of the labour force (Bélanger and Larrivée, 1992).

Ten years later, at roughly the same point in the economic cycle, the expected working life of active 25 year-old men had increased slightly, to 34 years, but the expected inactive years had also increased, to almost 18. However, among women the story had changed more markedly and, perhaps not surprisingly, in the opposite direction. Those active at age 25 could expect to work 29 years and to spend only 28 years out of the labour force.

Summary

As baby boomers begin to retire, changes in the ratio of retirees to workers will increasingly affect social security programs and social institutions. Higher participation rates among women and a reversion to later

retirement for both sexes would, of course, increase age-specific participation rates. However, they would do much less to affect the ratio of inactive to active persons once baby boomers become seniors. What is less certain is how much of the recent behaviour in the labour market will translate into persistent trends. For example, the plateauing of women's participation rates in the early 1990s seemed to indicate an upper limit, but now this does not appear to be the case. That women's wages should increase through time is understandable, but that wages for young men should deteriorate, less so. The strong growth in self-employment that continued into the expansion years seemed to indicate a major change in the nature of work, though that too has receded somewhat in the last few years. School attendance rates have levelled off, breaking a long-term upward trend. And perceptions of a rise in job instability do not seem to be founded, although they may be tied to the increased risk for those who do lose their job, since hiring rates were depressed for much of the last decade.

One recent study asked why the 1990s labour market had deviated from that of the 1980s (Picot and Heisz, 2000). It found that a number of possible causes existed, that finding answers to the "why" was an ongoing process, and that a number of major puzzles remained regarding recent labour market outcomes.

The challenge for economists is to isolate changes that are structural from those that are cyclical. Unfortunately, this can often be done only with hindsight—forecasts are only as good as their assumptions. The changes in the 1990s labour market, some of them temporary, some enduring, and some not even yet identified, serve as a warning that longer-term trends can end or reverse, and that change is constant.

Finally, much work remains to be done on activity patterns, for it is cumulative activity that affects a person's well-being and labour market decisions, and this is imperfectly reflected in cross-sectional estimates.

Perspectives

Notes

1 Cohort analysis follows the same group of people over time. Synthetic cohort analysis uses groups from different points in time, but matches them and adjusts for the time interval. For example, if one looked at 15-to-19 year-olds in 1994, then one would consider 20-to-24 year-olds in 1999.

2 Data are from the Labour Force Survey (LFS).

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Recent trends in taxes internationally

Zhengxi Lin

In 1997, Canada's overall taxation ranked in the middle of the G-7 countries and the 29 members of the Organisation for Economic Co-operation and Development (OECD) (Table 1). The story is mixed, however, when the various components are compared.

Canada's personal taxes were the highest of the G-7 nations and among the highest in the OECD. Its corporate taxes were in the middle of the G-7 and ninth highest of the 28 OECD countries for which data are available. Canada's payroll taxes were the lowest in the G-7 and the ninth lowest among all 29

Table 1: Tax revenues as a percentage of GDP

	Total		Personal		Corporate		Payroll		Property		Consumption	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
%												
Australia	27.4	29.8	12.0	12.5	3.3	4.4	1.4	2.0	2.1	2.7	8.5	8.2
Austria	40.3	44.3	9.3	9.8	1.4	2.1	15.3	18.0	1.2	0.6	12.7	12.5
Belgium	43.7	46.0	15.4	14.3	2.5	3.4	13.3	14.6	1.0	1.3	11.5	12.3
Canada	32.0	36.8	10.9	14.0	3.7	3.8	3.4	5.7	2.9	3.7	10.4	9.0
Czech Republic	..	38.6	..	5.2	..	3.3	..	16.9	..	0.5	..	12.6
Denmark	45.4	49.5	23.6	25.9	1.5	2.6	0.8	1.9	2.5	1.7	17.0	16.3
Finland	36.9	46.5	14.3	15.5	1.4	3.8	7.3	11.7	0.7	1.1	13.2	14.4
France	41.7	45.1	5.4	6.3	2.1	2.6	18.7	19.4	1.5	2.4	12.7	12.6
Germany	38.2	37.2	11.3	8.9	2.1	1.5	13.2	15.5	1.3	1.0	10.3	10.3
Greece	24.3	33.7	3.6	4.5	0.9	2.1	8.4	10.9	1.1	1.3	10.0	13.8
Hungary	..	39.4	..	6.6	..	1.9	..	14.3	..	0.6	..	15.5
Iceland	29.2	32.2	6.7	10.6	0.7	0.9	1.7	2.8	1.8	2.6	17.5	15.3
Ireland	32.6	32.8	10.4	10.3	1.5	3.3	4.8	4.6	1.7	1.6	14.3	13.0
Italy	30.4	44.4	7.0	11.2	2.4	4.2	11.7	15.0	1.1	2.3	8.0	11.5
Japan	25.4	28.8	6.2	5.9	5.5	4.3	7.4	10.6	2.1	3.1	4.2	4.8
Korea	17.5	21.4	2.0	3.6	1.9	2.2	0.3	2.0	1.4	2.9	11.0	9.7
Luxembourg	43.0	46.5	11.5	9.5	7.1	8.6	12.5	11.8	2.4	3.6	9.1	12.6
Netherlands	45.2	41.9	11.9	6.5	3.0	4.4	17.2	17.1	1.6	1.9	11.4	11.7
New Zealand	..	36.4	..	15.7	..	3.9	..	0.3	..	2.0	..	12.6
Norway	42.7	42.6	12.1	11.0	5.7	5.2	9.0	9.6	0.7	1.1	15.1	15.8
Poland	..	41.2	..	8.8	..	3.2	..	13.5	..	1.2	..	14.4
Portugal	..	34.2	..	6.1	..	3.7	..	8.9	..	0.8	..	14.4
Spain	23.9	33.7	4.9	7.4	1.2	2.6	11.6	11.8	1.1	2.0	5.0	9.7
Sweden	48.8	51.9	20.0	18.2	1.2	3.2	15.4	16.9	0.5	2.0	11.7	11.6
Switzerland	28.9	33.8	10.4	10.6	1.7	2.0	8.8	12.5	2.1	2.6	5.9	6.2
Turkey	17.9	27.9	7.8	6.0	0.7	1.6	2.5	4.0	1.0	0.8	4.6	10.3
United Kingdom	35.1	35.4	10.3	8.8	3.0	4.3	7.4	6.1	4.2	3.8	10.2	12.4
United States	27.6	29.7	10.8	11.6	3.0	2.8	6.0	7.2	2.9	3.2	4.9	4.9

Source: OECD (1999): Tables 3, 10, 12, 14, 20, 22 and 24

Note: Mexico is excluded because only some or no components are available.

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OECD member states. Its property taxes were the second highest among both the G-7 nations and the 28 OECD member countries for which data are available. Canada's goods and services taxes (also known as consumption taxes) were the third lowest in the G-7 and among the lowest in the OECD (fifth lowest).

This analysis compares recent trends in Canada's overall taxation and its various components with those of the G-7 and OECD member countries. It examines trends between 1980 and 1997, a period in which Canadian taxation expanded rapidly. Following international practice, the study uses the gross domestic product (GDP) as the tax base to compare effective tax rates (tax-to-GDP ratios) for all components, across all countries, over time.

Many factors can affect the tax-to-GDP ratios. These include the extent to which countries provide social or economic assistance through tax expenditures or direct government spending, differences in the degree of tax avoidance and the size of the underground economy, and differences in GDP measurement (see OECD [1999] for a detailed discussion).

The tax system differs substantially from one country to another (Lin, 2000). Even under the common OECD classification, different bases are used to calculate tax liabilities for different components. Furthermore, the tax liability for each component depends upon not only the tax base and the statutory (legislated) tax rate but also various exemptions, deductions, credits, surtaxes, and so on, which differ not only across different countries at the same point in time but also within the same country over time.

Table 2: Change in tax revenues as a percentage of GDP, 1980 to 1997

	Total		Personal		Corporate		Payroll		Property		Consumption	
	%-point	%	%-point	%	%-point	%	%-point	%	%-point	%	%-point	%
Australia	2.4	8.8	0.5	4.2	1.1	33.3	0.6	42.9	0.6	28.6	-0.3	-3.5
Austria	4.0	9.9	0.5	5.4	0.7	50.0	2.7	17.6	-0.6	-50.0	-0.2	-1.6
Belgium	2.3	5.3	-1.1	-7.1	0.9	36.0	1.3	9.8	0.3	30.0	0.8	7.0
Canada	4.8	15.0	3.1	28.4	0.1	2.7	2.3	67.6	0.8	27.6	-1.4	-13.5
Denmark	4.1	9.0	2.3	9.7	1.1	73.3	1.1	137.5	-0.8	-32.0	-0.7	-4.1
Finland	9.6	26.0	1.2	8.4	2.4	171.4	4.4	60.3	0.4	57.1	1.2	9.1
France	3.4	8.2	0.9	16.7	0.5	23.8	0.7	3.7	0.9	60.0	-0.1	-0.8
Germany	-1.0	-2.6	-2.4	-21.2	-0.6	-28.6	2.3	17.4	-0.3	-23.1	-	-
Greece	9.4	38.7	0.9	25.0	1.2	133.3	2.5	29.8	0.2	18.2	3.8	38.0
Iceland	3.0	10.3	3.9	58.2	0.2	28.6	1.1	64.7	0.8	44.4	-2.2	-12.6
Ireland	0.2	0.6	-0.1	-1.0	1.8	120.0	-0.2	-4.2	-0.1	-5.9	-1.3	-9.1
Italy	14.0	46.1	4.2	60.0	1.8	75.0	3.3	28.2	1.2	109.1	3.5	43.8
Japan	3.4	13.4	-0.3	-4.8	-1.2	-21.8	3.2	43.2	1.0	47.6	0.6	14.3
Korea	3.9	22.3	1.6	80.0	0.3	15.8	1.7	566.7	1.5	107.1	-1.3	-11.8
Luxembourg	3.5	8.1	-2.0	-17.4	1.5	21.1	-0.7	-5.6	1.2	50.0	3.5	38.5
Netherlands	-3.3	-7.3	-5.4	-45.4	1.4	46.7	-0.1	-0.6	0.3	18.8	0.3	2.6
Norway	-0.1	-0.2	-1.1	-9.1	-0.5	-8.8	0.6	6.7	0.4	57.1	0.7	4.6
Spain	9.8	41.0	2.5	51.0	1.4	116.7	0.2	1.7	0.9	81.8	4.7	94.0
Sweden	3.1	6.4	-1.8	-9.0	2.0	166.7	1.5	9.7	1.5	300.0	-0.1	-0.9
Switzerland	4.9	17.0	0.2	1.9	0.3	17.6	3.7	42.0	0.5	23.8	0.3	5.1
Turkey	10.0	55.9	-1.8	-23.1	0.9	128.6	1.5	60.0	-0.2	-20.0	5.7	123.9
United Kingdom	0.3	0.9	-1.5	-14.6	1.3	43.3	-1.3	-17.6	-0.4	-9.5	2.2	21.6
United States	2.1	7.6	0.8	7.4	-0.2	-6.7	1.2	20.0	0.3	10.3	-	-
G-7*	3.9	11.7	0.7	7.8	0.2	7.8	1.7	17.3	0.5	21.9	0.7	7.9
OECD	4.1	12.1	0.2	2.1	0.8	32.0	1.5	17.0	0.5	26.7	0.9	8.2

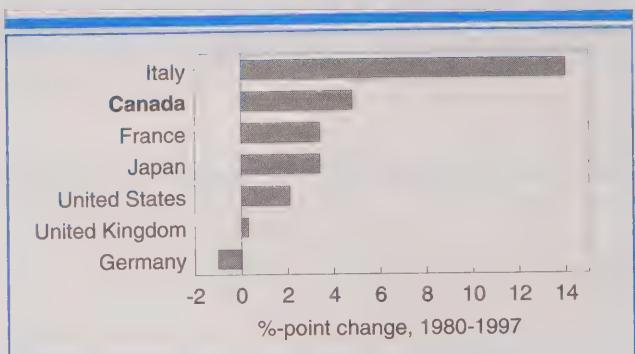
Source: Author's calculation from OECD (1999): Tables 3, 10, 12, 14, 20, 22 and 24.

Note: The Czech Republic, Hungary, Mexico, New Zealand, Poland and Portugal are excluded because only some or no components are available.

* The G-7 nations are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

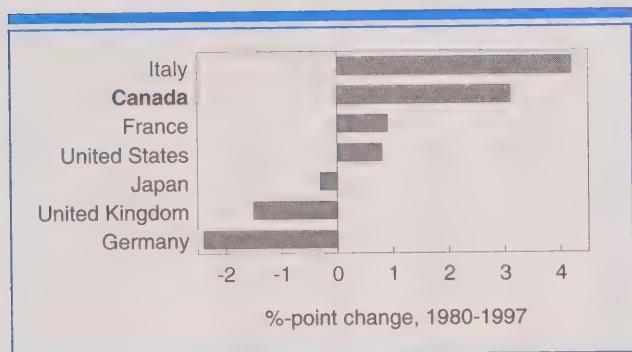
Canada had the second greatest increase in total taxation in the G-7 countries

The total tax-to-GDP ratio rose for 6 of the G-7 countries between 1980 and 1997. Of the 23 OECD countries for which comparable data are available, this ratio increased in 20 and declined in 3. Canada's total tax-to-GDP ratio increased by 4.8 percentage points (from 32.0% to 36.8%) or 15.0% (Table 2). This was the second highest growth in the G-7—lower only than that of Italy—and the seventh largest percentage-point increase among the relevant OECD countries.



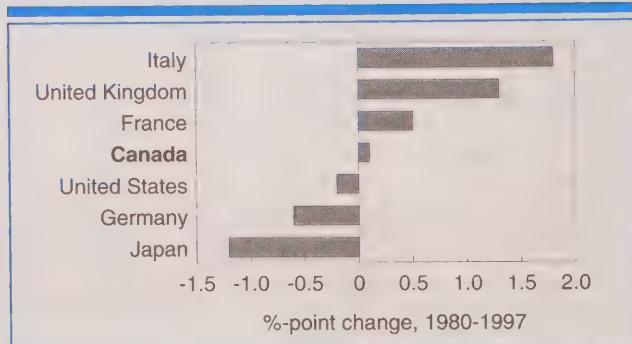
Personal taxation dropped in three G-7 countries

During the same period, the personal tax-to-GDP ratio went up for 4 G-7 countries and down for 3. For the 23 OECD countries under study, this ratio increased for 13 and decreased for the remaining 10. Canada's personal tax revenues as a percentage of GDP went up by 3.1 percentage points (from 10.9% to 14.0%) or 28.4%. This was the second largest increase among the 4 G-7 countries whose personal tax-to-GDP ratio had risen—smaller only than that of Italy—and the third greatest percentage-point increase among the 13 comparable OECD countries.



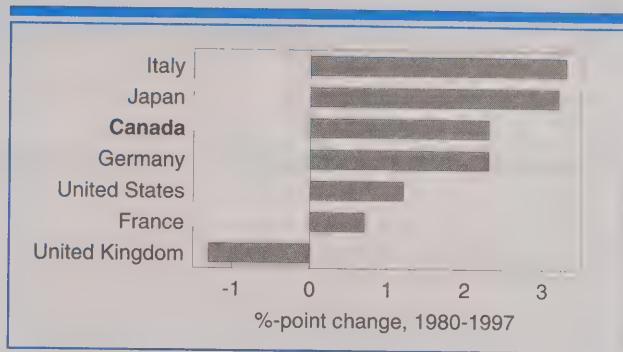
Canada had the smallest increase in corporate taxation

From 1980 to 1997, the corporate tax-to-GDP ratio went up for 4 G-7 countries and declined for 3. Among the 23 OECD nations under study, this tax ratio increased for 19 while it decreased for the remaining 4. Canada's corporate tax revenues as a percentage of GDP went up by 0.1 percentage point (from 3.7% to 3.8%) or 2.7%. This was the smallest increase among the 4 G-7 countries for which the ratio rose, as well as among the 19 comparable OECD countries.

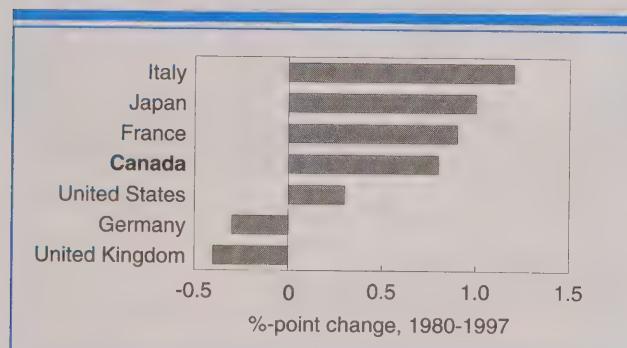


Payroll taxation decreased only in the United Kingdom

From 1980 to 1997, the payroll tax-to-GDP ratio increased in 6 G-7 countries. Of the 23 OECD member countries under study, this ratio rose in 19 and fell in 4. Canada's total payroll tax revenues as a percentage of GDP increased by 2.3 percentage points or 67.6%. This tied with Germany for the third largest percentage-point increase among the 6 G-7 countries for which the tax ratio had increased. It was the seventh largest percentage-point increase among the 19 relevant OECD member states.



Property taxation increased in most G-7 countries



From 1980 to 1997, the property tax-to-GDP ratio went up in 5 G-7 countries and declined in 2. Among the 23 OECD member countries under study, the ratio climbed in 17 and declined in the remaining 6. Canada's property tax revenues as a percentage of GDP went up by 0.8 percentage points (from 2.9% to 3.7%) or 27.6% during this period. This is the second smallest increase in the 5 G-7 countries whose tax ratio had increased, but in the middle of the 17 relevant OECD member states.

Consumption taxation dropped in Canada

From 1980 to 1997, the consumption tax-to-GDP ratio rose in Italy, the United Kingdom and Japan, decreased in Canada and France, and remained unchanged in Germany and the United States. Among 23 OECD member countries, this tax ratio increased in 12, decreased in 9 and remained unchanged in 2. Canada's consumption tax revenues as a percentage of GDP decreased by 1.4 percentage points (from 10.4% to 9.0%) or 13.5%. This was the largest decrease among the G-7 and the second largest percentage-point drop among the 9 OECD member states whose tax-to-GDP ratios declined.

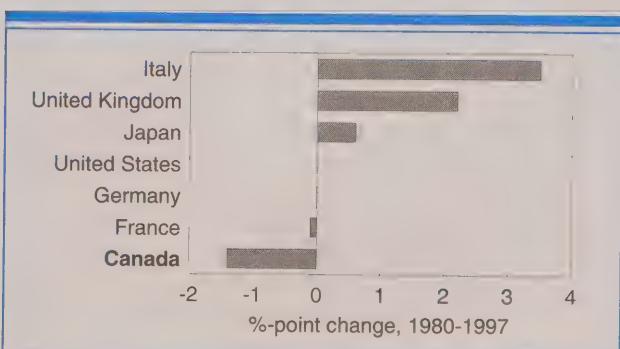


Table 3: Sources of change in total tax revenues, 1980 to 1997

	Total change	Component contribution*				
		Personal	Corporate .	Payroll	Property	Consumption
	%-point		%			
Australia	2.4	20.8	45.8	25.0	25.0	-12.5
Austria	4.0	12.5	17.5	67.5	-15.0	-5.0
Belgium	2.3	-47.8	39.1	56.5	13.0	34.8
Canada	4.8	64.6	2.1	47.9	16.7	-29.2
Denmark	4.1	56.1	26.8	26.8	-19.5	-17.1
Finland	9.6	12.5	25.0	45.8	4.2	12.5
France	3.4	26.5	14.7	20.6	26.5	-2.9
Germany	-1.0	240.0	60.0	-230.0	30.0	-
Greece	9.4	9.6	12.8	26.6	2.1	40.4
Iceland	3.0	130.0	6.7	36.7	26.7	-73.3
Ireland	0.2	-50.0	900.0	-100.0	-50.0	-650.0
Italy	14.0	30.0	12.9	23.6	8.6	25.0
Japan	3.4	-8.8	-35.3	94.1	29.4	17.6
Korea	3.9	41.0	7.7	43.6	38.5	-33.3
Luxembourg	3.5	-57.1	42.9	-20.0	34.3	100.0
Netherlands	-3.3	163.6	-42.4	3.0	-9.1	-9.1
Norway	-0.1	1,100.0	500.0	-600.0	-400.0	-700.0
Spain	9.8	25.5	14.3	2.0	9.2	48.0
Sweden	3.1	-58.1	64.5	48.4	48.4	-3.2
Switzerland	4.9	4.1	6.1	75.5	10.2	6.1
Turkey	10.0	-18.0	9.0	15.0	-2.0	57.0
United Kingdom	0.3	-500.0	433.3	-433.3	-133.3	733.3
United States	2.1	38.1	-9.5	57.1	14.3	-
G-7**	3.9	17.8	6.3	43.3	13.0	17.8
OECD	4.1	5.4	19.6	35.8	11.1	21.0

Source: Author's calculation from OECD (1999): Tables 3, 10, 12, 14, 20, 22 and 24.

Note: The Czech Republic, Hungary, Mexico, New Zealand, Poland and Portugal are excluded because only some or no components are available.

* Percentage contributions may not add to 100 because other taxes are not included here.

** The G-7 nations are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

Personal taxes led growth in Canada

As mentioned, Canada's total tax-to-GDP ratio rose by 4.8 percentage points or 15.0% between 1980 and 1997. Of this growth, nearly 65% was accounted for by an increase in the personal tax-to-GDP ratio. Growth in the payroll tax-to-GDP ratio contributed another 48% and the property tax-to-GDP ratio, 17%. A rise in the corporate tax-to-GDP ratio contributed very little (2%). Rises were offset by a 29% drop in the consumption tax-to-GDP ratio (Table 3).

The pattern of change varied substantially from one country to another. On average, among the G-7 countries growth in the payroll tax-to-GDP ratio was the largest contributor, accounting for 43% of the growth in the total tax-to-GDP ratio. Rises in the personal tax-to-GDP ratio and in consumption tax-to-GDP accounted for 18% each. Increases in the property tax-to-GDP ratio and the corporate tax-to-GDP ratio contributed 13% and 6%.

On average, growth in the payroll tax-to-GDP ratio made the largest contribution to the increase in the total tax-to-GDP ratio of 23 OECD countries (accounting for 36%). Increases in the consumption and corporate tax-to-GDP ratios made the second and third largest contributions (accounting for 21% and 20%, respectively). A rise in the property tax-to-GDP ratio contributed 11%. Growth in the personal tax-to-GDP ratio was least important, accounting for just 5%.

Perspectives

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Overqualified? Recent graduates, employer needs

Marc Frenette

This article answers the question, "To what extent, if any, have the education levels of graduates surpassed the needs of employers?" In other words, what percentage of recent Canadian graduates have more postsecondary education than their main employer requires? For the most part, this question remains unexplored. It is an important issue, since overqualification has been linked to lower earnings (Sicherman, 1991; Rumberger, 1987) and to lower productivity (Tsang, Rumberger and Levin, 1991).

One recent study concluded that master's graduates were more likely to be overqualified than bachelor's graduates (Lavoie and Finnie, 1997), but another found that they had a large earnings advantage (Finnie, 1999). The latter findings seem to contradict those of Sicherman and Rumberger, a contrast this article attempts to reconcile.

The term "overqualified" refers to someone who possesses more education than was required by the main employer (see *Data sources and methodology*). For several reasons, it should not be interpreted as "possessing too much education." First, graduates may use their jobs after graduation as stepping-stones to better jobs. Second, while employers may not have expected to receive job applications from highly educated candidates, they may still benefit from these graduates' knowledge. Third, whether extra knowledge is required for the job or not, employers may still save time and money by screening interviewees according to their level of education. In other words, employers often use education as a proxy for skill acquisition. And fourth, it is reasonable to assume that the higher the level of education in society as a whole, the more benefits society derives.

Adapted from an article in *Education Quarterly Review* (Statistics Canada, Catalogue no. 81-003-XPB) 7, no. 1 (Winter 2000). Marc Frenette is with the Business and Labour Market Analysis Division. He can be reached at (613) 951-4228 or marc.frenette@statcan.ca.

Data sources and methodology

The academic literature refers to the incidence of education above the level required as *overeducation*, *surplus schooling* or *overqualification*. The term overqualification seems more appropriate because it refers specifically to requirements for the job.

The data used for this study are from the National Graduates Surveys (NGS) and Follow-Ups to the National Graduates Surveys.¹ Three cohorts of Canadian postsecondary graduates are examined: the classes of 1982 (interviewed in 1984 and 1987), 1986 (interviewed in 1988 and 1991) and 1990 (interviewed in 1992 and 1995). The NGS provides specific field-of-study codes,² which the study has used to establish links between specific academic programs and the incidence of overqualification. The article focuses on graduates of college, bachelor's, master's and doctoral programs.

The job requirement question used in this study is, "When you were selected for that job, what level of education was needed to get the job?" The question (and, thus, the overqualification variable) refers to the beginning of a particular job, not to the beginning of the respondent's employment with an employer. A respondent will not be labelled overqualified simply because the requirements of the first job with an employer were low and he or she took training in order to obtain a promotion.

The level of education attained was provided by institutions, while the level of education required was provided by the graduates. The latter were asked to recollect the level the employer *actually* required (as opposed to the level the graduate *believed* was required). A graduate was considered overqualified if his or her level of education was higher than that required by the employer. Using the graduate's perception of the requirements could have restricted this research to a skills-based study, whereas using the employer's actual requirements incorporated both labour market functions of education: skill acquisition and screening (or filtering).

This article examines the rates of overqualification for various graduate characteristics; the rates of overqualification by at least two levels of study; and the relationship between overqualification and labour market outcomes, such as earnings and skill-use.

Overqualification by at least one level

In this section, percentages of overqualified graduates are analyzed across five dimensions: level of education, field of study, co-operative studies,³ geographical region, and industry. All numbers refer to overqualification by at least one education level. The five levels of educational requirements used are below college, college, bachelor's, master's and doctorate. The study is limited to graduates who had not received a new diploma since graduating in the reference year, and had not been working part time in the interview year in order to attend school.⁴ The samples are further restricted to graduates who had not obtained a higher diploma prior to the one held in the reference year.⁵

Level of education

Overall, roughly one-third of graduates were overqualified for their main job. The highest percentages of overqualified graduates were at the master's level—a finding that applied to all cohorts and interviews. About 27% to 48% of college, bachelor's and doctoral graduates were overqualified. For master's graduates the range was 48% to 72% (Table 1).⁶

For each cohort, and for all levels of education except college, the percentages of overqualified graduates dropped sometime between the second and fifth year after

graduation. The rate rose for all college graduates except women in the 1990 cohort.

With respect to long-term trends, post-1982 graduates with higher levels of education (master's and doctorate) were less likely to be overqualified.⁷ For lower levels of education, a downward shift occurred between the 1986 and 1990 cohorts, but no significant differences were seen between the 1982 and 1990 cohorts.

So why did overqualification rates fall after the mid-1980s? Changes in the labour market seem to be the main reason. The educational requirements for the jobs graduates secured (as measured by the education-required index) increased faster than the level of education attained by the graduates (as measured by the education-attained index) (Chart).⁸ These aggregate numbers may not, however, tell the whole story behind the trends. It is possible that individual employers and recent graduates

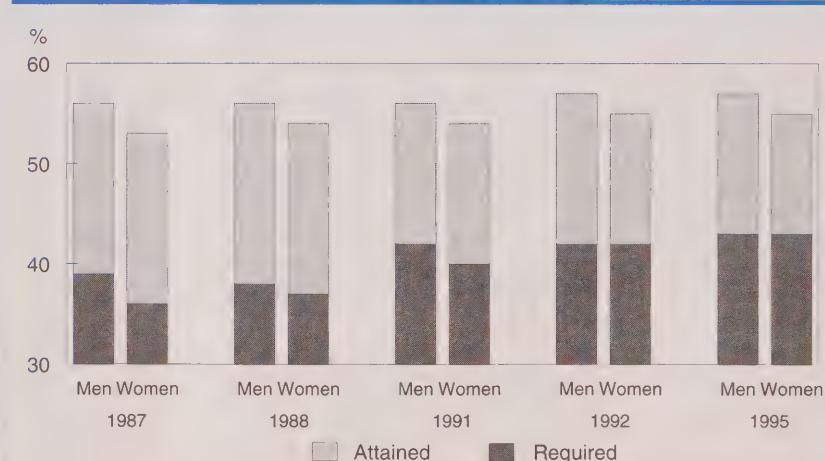
increased their ability to "match" themselves (perhaps through better advertising and search mechanisms).

Overqualification also differed by sex. Male college graduates were more likely to be overqualified than female college graduates. Male bachelor's graduates were slightly less likely to be overqualified than their female counterparts. At the master's level, men were more likely to be overqualified. Little difference was seen at the doctoral level.

Study program

At the college level, graduates of nursing and medical technology tended not to be overqualified. However, high rates prevailed for graduates of arts and humanities, other health (data available for women only), natural and animal sciences, protective services, secretarial services (data available for women only) and other business services.

Chart: Between 1987 and 1995, overqualification rates fell for both men and women.



Source: National Graduates Surveys

Note: These numbers represent indices; numbers were not available for the 1984 NGS (see note 8).

Table 1: Level of “overqualification” for main job, by field of study

	1982 cohort				1986 cohort				1990 cohort			
	1984		1987		1988		1991		1992		1995	
	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)
%												
College												
Men	43	..	48	43	46	41	47	39	41	36	45	37
Arts and humanities	61	..	66	62	54	51	66	57	56	55	56	55
Nursing	17	..	24	24	13	11	20	20	7	6	7	7
Medical technologies	20	..	26	19	18	9	13	7	17	11	14	6
Other health	--	..	--	--	--	--	--	--	--	--	--	--
Electrical technologies	27	..	32	26	37	32	39	29	44	30	43	31
Math and computer science	21	..	30	26	29	25	28	21	27	24	32	26
General engineering	39	..	52	46	37	29	42	27	34	24	42	26
Other engineering	44	..	53	48	50	44	51	40	46	38	46	34
Natural and animal sciences	65	..	69	61	64	62	59	56	56	54	61	53
Primary industries	40	..	55	47	56	50	57	48	37	31	49	42
Protective services	54	..	47	46	67	62	64	61	57	56	66	62
Social services and recreation	40	..	49	47	48	48	49	47	42	35	38	32
Other social sciences	34	..	--	--	54	54	--	--	--	--	--	--
Secretarial services	--	..	--	--	--	--	--	--	--	--	--	--
Other business services	58	..	56	52	55	52	54	50	49	47	52	48
Women	33	..	41	38	37	34	39	35	34	31	34	31
Arts and humanities	53	..	61	57	63	60	53	47	55	51	53	49
Nursing	4	..	10	8	8	7	9	9	6	6	7	6
Medical technologies	10	..	20	16	18	11	18	10	22	18	25	22
Other health	41	..	65	65	47	43	47	39	53	49	--	--
Electrical technologies	--	..	--	--	--	--	--	--	56	49	--	--
Math and computer science	34	..	42	39	32	29	32	30	32	24	37	29
General engineering	44	..	--	--	37	29	40	31	46	40	47	42
Other engineering	34	..	41	38	36	31	48	35	45	43	39	35
Natural and animal sciences	47	..	56	54	47	45	51	43	39	27	32	23
Primary industries	46	..	49	49	40	39	37	37	48	41	62	57
Protective services	65	..	63	62	57	55	68	66	51	50	51	49
Social services and recreation	33	..	41	36	38	37	45	44	37	36	34	33
Other social sciences	23	..	25	24	29	27	32	32	26	25	24	23
Secretarial services	49	..	61	56	54	50	54	46	47	41	48	42
Other business services	54	..	59	55	56	52	58	53	48	45	47	43
Bachelor's												
Men	32	26	29	25	34	28	28	21	29	23	27	21
Education	26	19	28	24	25	19	19	15	20	17	19	15
Fine arts and humanities	54	47	44	42	54	51	41	33	55	49	53	43
Commerce	31	24	30	26	40	31	36	29	27	20	26	20
Economics	46	41	47	47	48	46	38	34	36	30	35	32
Other social sciences	54	45	50	40	62	55	48	39	52	44	46	38
Agricultural and biological sciences	41	35	46	46	43	40	35	25	40	34	36	30
Engineering and computer science	18	11	15	12	19	12	16	8	12	7	13	9
Other health	13	9	--	--	32	17	21	18	15	6	19	2
Math and physical sciences	27	21	21	14	32	26	18	14	32	28	27	23
Law	6	6	3	-	18	18	17	17	13	6	21	18
Medical sciences	12	10	12	10	7	7	1	1	6	5	9	9
Women	35	24	30	25	42	29	34	23	30	21	27	19
Education	23	15	19	16	28	22	25	19	10	7	13	9
Fine arts and humanities	55	43	48	44	61	51	41	34	46	40	42	38
Commerce	29	23	27	23	42	30	42	26	32	22	27	19
Economics	39	37	--	--	47	38	33	28	50	45	--	--
Other social sciences	54	41	45	39	54	40	39	30	43	33	37	27
Agricultural and biological sciences	32	22	32	24	37	35	23	15	38	28	35	23
Engineering and computer science	17	11	9	7	23	13	19	14	15	9	19	9
Other health	24	1	22	9	50	11	46	13	32	4	28	6
Math and physical sciences	26	16	26	23	28	22	36	28	25	20	13	9
Law	20	16	7	7	11	11	5	5	11	10	14	14
Medical sciences	5	4	2	2	7	6	5	4	5	5	10	9

Table 1: Level of “overqualification” for main job, by field of study (concluded)

	1982 cohort				1986 cohort				1990 cohort			
	1984		1987		1988		1991		1992		1995	
	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)	1(+)	2(+)
%												
Master's												
Men	72	14	64	17	64	13	58	13	60	8	58	8
Education	87	17	77	21	75	14	67	9	70	7	64	7
Fine arts and humanities	69	23	66	23	62	21	55	18	56	17	52	15
Commerce	75	18	65	19	62	15	63	14	65	8	65	8
Economics	50	5	45	36	41	13	39	4	44	5	30	5
Other social sciences	65	14	56	13	61	16	51	12	53	13	50	12
Agricultural and biological sciences	56	4	57	15	63	18	42	3	52	6	54	10
Engineering and computer science	66	5	63	8	64	5	59	8	59	4	60	5
Other health	42	3	37	2	53	7	46	-	40	4	39	3
Math and physical sciences	68	9	59	14	55	7	38	12	49	6	49	9
Law	--	--	--	--	--	--	--	--	--	--	--	--
Medical sciences	--	--	--	--	77	25	--	--	68	--	46	4
Women	64	15	55	15	62	17	56	16	50	8	48	8
Education	80	14	70	18	78	17	74	14	61	4	59	4
Fine arts and humanities	50	17	46	14	54	21	46	17	51	11	45	13
Commerce	74	22	63	26	61	21	60	21	53	8	57	11
Economics	--	--	--	--	--	--	--	--	30	11	--	--
Other social sciences	51	14	46	11	54	16	43	17	41	9	37	11
Agricultural and biological sciences	61	18	54	14	52	17	58	14	47	6	38	7
Engineering and computer science	59	4	55	5	59	12	60	5	51	4	68	10
Other health	33	2	30	8	38	10	29	4	29	5	24	4
Math and physical sciences	--	--	--	--	57	15	58	4	40	6	50	4
Law	--	--	--	--	--	--	--	--	--	--	--	--
Medical sciences	85	30	--	--	80	13	81	33	61	27	--	--
Doctorate												
Men	41	19	39	21	34	14	34	17	29	11	29	12
Education	72	30	71	27	65	23	65	10	50	22	46	13
Fine arts and humanities	52	34	44	39	40	23	35	17	31	9	29	12
Commerce	--	--	--	--	--	--	--	--	--	--	--	--
Economics	--	--	--	--	--	--	--	--	--	--	--	--
Other social sciences	43	12	40	17	41	10	30	8	35	13	29	10
Agricultural and biological sciences	16	10	22	18	16	8	18	14	20	5	22	4
Engineering and computer science	42	21	42	17	27	9	35	20	30	11	26	12
Other health	--	--	--	--	--	--	--	--	21	18	--	--
Math and physical sciences	36	21	32	19	30	11	34	16	27	8	36	18
Law	--	--	--	--	--	--	--	--	--	--	--	--
Medical sciences	--	--	--	--	--	--	--	--	--	--	--	--
Women	39	13	38	19	36	12	35	15	30	9	29	9
Education	56	17	49	22	59	12	50	8	45	12	44	14
Fine arts and humanities	--	--	--	--	36	10	29	4	32	12	34	10
Commerce	--	--	--	--	--	--	--	--	--	--	--	--
Economics	--	--	--	--	--	--	--	--	--	--	--	--
Other social sciences	37	7	45	17	37	13	36	17	34	4	31	8
Agricultural and biological sciences	--	--	--	--	--	--	--	--	14	12	6	3
Engineering and computer science	--	--	--	--	--	--	--	--	--	--	--	--
Other health	--	--	--	--	--	--	--	--	35	19	--	--
Math and physical sciences	--	--	--	--	--	--	--	--	19	6	19	3
Law	--	--	--	--	--	--	--	--	--	--	--	--
Medical sciences	--	--	--	--	--	--	--	--	--	--	--	--

Source: National Graduates Surveys

At the bachelor's level, both male and female graduates of engineering and computer science, law, and medical sciences had low rates of overqualification, as did female graduates of education. Both male and female graduates of fine arts and humanities and other social sciences reported high rates, as did male graduates of economics and agricultural and biological sciences.

Within the master's category, education graduates tended to have high incidences of overqualification, while the reverse was true for other health graduates. Based on available evidence, high rates were apparent among medical science graduates, such as podiatrists and dermatologists.

Doctoral graduates in education had high rates of overqualification, while the reverse was true in agricultural and biological sciences.

"Co-op" graduates at the college level were generally as likely to be overqualified as non co-op graduates; those at the bachelor's level, less so. Master's graduates of both programs had roughly equal rates (Table 2).⁹

Region

The rates of overqualified graduates by region are related to each region's needs for skilled workers, as well as to the desire of such workers to live there. An economically stagnant region may require very few skilled workers, which would tend to increase the rate of overqualification if these workers were to remain. However, if they were to move to an area where their skills were in greater demand, this would reduce regional differences in rates of overqualification.

Because recent graduates tend to be more mobile than the general population,¹⁰ regional differences for each level of education were small over the study period, supporting the above hypothesis. College graduates, however, were less mobile than university graduates and had a lower dispersion in overqualification rates.

Industry

Considerable differences appeared in the rates of overqualification across industries. Generally, education and health services had the lowest percentage of overqualified graduates. This held true for all levels of education except the master's degree, where industry and overqualification did not appear to be linked. For all levels of education, the private and public sectors employed similar percentages of overqualified graduates.

Overqualification by two or more levels

Unless otherwise stated, this section refers to the percentages of graduates overqualified by two or more levels. The six levels of educational requirements are below trade-vocational, trade-vocational, college, bachelor's, master's and doctorate.

Higher-level graduates were less likely than other graduates to be overqualified by two or more levels. This is despite the greater number of possible levels below their own. Master's recipients, as previously stated, had the highest rates of overqualification, owing to their high proportion in jobs requiring a bachelor's degree. This suggests that, although a given job required a bachelor's, the employer may have preferred to make use of the higher degree, thus filtering out the bachelor's graduates early in the process. (This finding may help explain why master's graduates, often in jobs for which they may have been overqualified, though rarely by two or more levels, earned more than bachelor's graduates.)

Roughly 31% to 43% of college graduates, 19% to 29% of bachelor's graduates, 8% to 17% of master's graduates, and 9% to 21% of doctoral graduates were overqualified by two or more levels (Table 1). This trend was less evident in the 1990s than for earlier cohorts, which contradicts the common view that recent graduates have held more "burger-flipping" jobs than in the past. The dispersion by field of study for college and bachelor's graduates was similar to the general results discussed earlier (see "Study program"). Graduates of other health fields at the bachelor's level typically experienced much lower overqualification rates relative to other fields.

At the master's level, graduates of engineering and computer science, as well as other health graduates, were unlikely to be overqualified by two or more levels. Results for doctoral graduates mirrored those noted earlier by study program.

Is overqualification linked to earnings and skill use?

The study employed a use-of-skills index¹¹ for three classes of worker: not overqualified, overqualified and overqualified by at least two levels. Although all workers classified in the third category were also in the second, the converse was not necessarily true. Comparisons between the first category and the other two are therefore the most relevant.

Table 2: Graduates “overqualified” for main job, by co-op status, region and industry

	Men						Women					
	1982 cohort		1986 cohort		1990 cohort		1982 cohort		1986 cohort		1990 cohort	
	1984	1987	1988	1991	1992	1995	1984	1987	1988	1991	1992	1995
College												
Non co-op	44	49	46	47	43	45	35	42	37	38	34	34
Co-op	41	44	37	46	36	42	29	38	29	60	35	34
Region												
Atlantic	36	51	49	53	37	44	15	31	29	33	26	30
Quebec	35	39	37	27	39	37	32	41	37	31	40	36
Ontario	49	52	47	51	42	44	36	44	38	42	32	32
Prairies	39	45	47	56	49	57	18	23	28	33	31	29
British Columbia and the Territories	49	59	55	62	45	54	36	44	39	43	30	37
Industry												
Public	33	42	49	50	39	44	49	57	47	51	57	58
Semi-public	25	29	26	23	19	21	12	20	16	20	18	18
Private	47	51	48	50	47	50	52	59	57	57	51	50
Bachelor's												
Non co-op	33	30	35	29	31	29	36	31	43	35	30	27
Co-op	20	18	15	11	14	14	21	15	18	23	14	14
Region												
Atlantic	31	29	37	27	31	26	32	29	40	34	33	30
Quebec	29	25	36	29	28	23	32	28	47	41	31	28
Ontario	35	34	32	27	30	29	40	33	40	31	28	27
Prairies	34	28	36	32	34	33	33	26	39	32	31	30
British Columbia and the Territories	34	32	43	30	33	34	40	37	49	35	30	24
Industry												
Public	39	37	51	38	39	37	40	32	45	35	36	37
Semi-public	24	17	25	19	20	19	26	24	37	31	21	17
Private	33	31	35	29	31	28	46	37	48	40	40	38
Master's												
Non co-op	72	65	65	58	60	58	63	55	63	57	51	48
Co-op	67	53	--	--	51	55	64	60	--	--	44	43
Region												
Atlantic	68	64	65	61	60	50	55	46	62	53	50	48
Quebec	79	72	68	62	64	62	71	63	67	67	57	55
Ontario	70	61	62	56	60	59	61	51	60	54	46	42
Prairies	70	65	60	55	62	57	67	62	59	44	58	61
British Columbia and the Territories	67	63	59	48	49	51	54	53	60	49	44	38
Industry												
Public	72	68	67	61	65	66	63	60	60	56	49	54
Semi-public	72	63	59	50	56	51	62	54	61	54	47	43
Private	72	64	66	63	62	60	69	59	68	65	60	59
Doctorate												
Non co-op	40	37	34	33	29	29	39	38	37	35	30	30
Co-op	--	--	--	--	--	--	--	--	--	--	--	--
Region												
Atlantic	--	--	34	25	21	20	--	--	--	--	--	--
Quebec	44	43	35	37	24	26	--	--	45	39	31	29
Ontario	37	34	35	33	34	35	36	42	31	29	31	30
Prairies	--	--	33	35	36	27	--	--	--	--	--	--
British Columbia and the Territories	--	--	34	34	30	29	--	--	--	--	23	30
Industry												
Public	57	61	49	47	40	43	--	--	52	--	29	36
Semi-public	32	29	28	26	20	19	33	33	32	30	27	26
Private	58	52	44	51	45	44	--	--	--	--	47	43

Source: National Graduates Surveys

Table 3: Mean earnings and use of skills by sex, education and level of overqualification (OQ)

Mean earnings, education required				Mean earnings, education attained				Skills index*			
College	Bachelor's	Master's		College	Bachelor's	Master's	Doctorate	College	Bachelor's	Master's	Doctorate
1995 \$ ('000)											
Men											
1982 cohort											
1984											
Not OQ	30.6	37.3	45.7	30.6	37.4	48.4	45.9	94	93	96	99
1 (+)	36.9	51.6	55.9	26.0	31.2	50.8	53.1	56	58	87	92
2 (+)	52.0	50.9	..	..	30.3	47.3	50.0	..	52	81	87
1987											
Not OQ	34.8	43.8	51.6	36.7	45.6	55.1	51.3	95	94	96	100
1 (+)	38.5	54.7	61.3	33.9	38.8	55.0	58.6	70	69	91	96
2 (+)	--	--	..	32.9	34.9	52.1	57.7	69	64	77	90
1986 cohort											
1988											
Not OQ	30.0	36.9	43.8	30.1	36.9	47.1	45.2	95	93	98	98
1 (+)	35.7	51.0	52.5	28.3	33.4	49.6	51.3	69	66	87	92
2 (+)	41.1	48.5	..	27.8	32.9	44.1	49.5	67	61	73	86
1991											
Not OQ	35.1	42.4	46.9	35.7	43.7	51.6	52.2	94	92	98	98
1 (+)	36.7	52.2	49.2	35.2	38.8	53.9	54.9	77	70	90	95
2 (+)	--	51.9	..	34.2	37.1	51.5	51.9	75	69	84	90
1990 cohort											
1992											
Not OQ	30.7	36.1	45.6	30.7	36.4	47.8	45.6	83	79	87	94
1 (+)	32.0	50.1	51.9	26.2	27.2	48.4	50.4	54	46	72	80
2 (+)	--	49.2	..	25.6	26.2	36.7	47.8	50	41	53	74
1995											
Not OQ	36.3	43.6	53.5	36.6	44.0	54.7	52.9	79	76	86	94
1 (+)	34.5	56.1	56.8	32.2	35.3	55.1	56.2	56	52	72	84
2 (+)	--	54.0	..	31.3	35.8	49.0	55.4	53	47	59	75
Women											
1982 cohort											
1984											
Not OQ	25.9	32.9	39.0	26.1	33.0	41.6	42.3	96	93	97	97
1 (+)	34.9	45.3	51.4	19.8	27.3	43.2	50.8	65	63	87	87
2 (+)	41.4	--	..	..	24.1	36.6	49.6	..	53	78	66
1987											
Not OQ	27.9	36.1	41.2	28.9	37.9	45.4	46.6	97	93	98	99
1 (+)	31.3	44.6	--	23.6	31.7	46.1	50.7	76	72	90	98
2 (+)	--	--	..	23.1	27.5	40.7	--	75	67	77	--
1986 cohort											
1988											
Not OQ	27.1	33.4	39.6	27.1	33.4	43.1	42.5	96	94	97	96
1 (+)	34.2	44.6	50.3	22.3	29.8	43.4	47.6	74	71	90	92
2 (+)	42.8	--	..	22.3	28.0	39.9	42.5	71	66	80	88
1991											
Not OQ	28.8	37.3	41.6	29.7	38.2	45.5	48.6	95	92	98	99
1 (+)	31.2	45.2	--	25.0	32.8	45.6	49.4	76	74	91	95
2 (+)	--	--	..	24.8	28.4	37.5	--	74	68	76	--
1990 cohort											
1992											
Not OQ	27.6	33.8	40.8	27.6	33.8	43.9	45.1	88	80	88	95
1 (+)	31.5	45.1	49.0	21.8	26.4	42.7	50.2	58	51	74	81
2 (+)	34.2	58.1	..	21.6	24.4	30.0	53.0	56	42	55	74
1995											
Not OQ	29.7	37.9	46.7	29.9	38.3	48.0	50.5	85	77	87	95
1 (+)	32.8	49.2	53.4	24.7	29.4	46.9	55.1	59	55	74	82
2 (+)	39.5	59.3	..	24.7	29.4	46.9	55.1	57	50	63	75

Source: National Graduates Surveys

* See note 11.

Two dimensions of earnings were considered: for two people holding jobs requiring the same level of education, did more education matter, and for two people possessing the same level of education, did the educational requirements of the job matter?

Despite equal levels of requirement, people with more education generally earned more. For equal levels of educational attainment, higher requirements generally led to higher earnings for college and bachelor's graduates only (Table 3). For graduates of master's or doctoral programs, the level of education required did not seem to influence earnings greatly. These graduates had more options available to them and could thus obtain jobs with lower requirements and competitive salary packages.

If employers did indeed use education as a screening device in the interview process, overqualification and skill use would not necessarily be negatively linked, though this study did find such a relationship for college and bachelor's graduates. Graduates who were overqualified used their skills to a lesser extent than their classmates who were not. For holders of graduate degrees, the drop in skill use was relatively small.

As noted earlier, the high proportion of master's graduates who held jobs requiring a bachelor's degree still tended to use their skills to a large extent.¹² In other words, some of the filtering by employers may have been justified.

Even when the typical master's graduate and the typical bachelor's graduate filled jobs with identical educational requirements, the former still enjoyed an earnings advantage, perhaps in recognition of relevant skills not officially required for the job.

Summary

Throughout the 1980s and 1990s, roughly one-third of graduates were overqualified for their main job. Depending on the year of graduation, education level and sex, anywhere from 27% to 48% of recent college, bachelor's and doctoral graduates were overqualified for their main job. At the master's level, the range was 48% to 72%. Previous studies have pointed to an earnings advantage for a master's over a bachelor's degree, while others have linked overqualification to lower earnings. This article makes two observations that may reconcile these findings. First, master's graduates are less likely to be

overqualified by two or more levels. Second, overqualification is not linked to a large drop in skill use among these graduates. For bachelor's graduates, large drops in skill use are linked to overqualification.

Over the study period, the gap between the average level of education attained and that required narrowed considerably. This is due partly to the increased demand from employers for skilled workers, but could also be linked to an increased ability of employers and graduates to "match" themselves.

Certain differences by sex were also found. Men at the college and master's levels were more likely to be overqualified than were women, whereas the reverse was true at the bachelor's level. No important differences occurred at the doctoral level.

Considerable differences appeared across fields of study at the college and bachelor's levels. Holders of graduate degrees from most fields had roughly equal probabilities of being overqualified. Co-operative studies seemed to reduce the incidence of overqualification at the bachelor's level only.

Small regional differences were also evident, owing perhaps to the tendency of recent graduates to expand their job search to a national level. The one exception was college graduates, who were generally less mobile than other graduates.

Finally, the data indicate that the semi-public sector (education and health services) had a much lower tendency to employ overqualified graduates than did the public and private sectors. This is not surprising, given that many employees in the semi-public sector are professionals (doctors, teachers and nurses). More education did lead to higher earnings for a given level of requirement; however, finding a job that required more education also led to more earnings (at least for college and bachelor's graduates). It appears that graduates of master's and doctoral programs had more options available to them; whether or not their job required as much education as they possessed did not seem to affect their earnings. Overqualified college and bachelor's graduates also tended to use fewer of their skills than did their non-overqualified colleagues. For holders of graduate degrees, no significant loss in skill use was detected.

■ Notes

- 1 This study refers to all of these surveys as the NGS.
- 2 The NGS has five-digit University Student Information System (USIS) and Community College Student Information System (CCSIS) field-of-study codes.
- 3 For a more detailed look at co-operative education see Darch (1995).
- 4 Those who had received a new diploma since the reference year had less time to search for a suitable job, whereas those who worked part-time hours because they were attending school were too occupied to work full-time hours.
- 5 This restriction was required because no specific information is available for such diplomas (for example, the date obtained or the field of study).
- 6 Unless specific years are mentioned, all results in this study refer to the entire period.
- 7 One factor that could explain this long-term downward trend is a possible "brain drain" to other countries. However, little evidence is available to support this hypothesis.
- 8 The index is calculated as the mean of the education attained (or required), in which a doctorate obtains a score of 100, a master's 80, a bachelor's 60, a college diploma 40, a trade-vocational diploma 20, and anything lower 0. Results for 1984 are unavailable since it is not possible to distinguish between jobs requiring a trade-vocational diploma and jobs requiring less training.
- 9 Reliable results for doctoral graduates are not available, because of low sample sizes.
- 10 Recent graduates may be unattached or simply more willing to move to other provinces in order to start their career. See Burbidge and Finnie (forthcoming) for a detailed description of the mobility of recent baccalaureate graduates. Their results show that recent graduates are considerably more mobile than the general population. See Finnie (1998) for a description of the mobility patterns of the general population.

11 For the 1982 and 1986 cohorts, this was based on the question, "Are you using the skills acquired through your educational program in your job?" Positive responses were given a score of 100 and negative responses a score of 0. For the 1990 cohort, this was based on the question, "To what extent do you use the skills acquired through the educational program in your job?" This index can range from 0 to 100 (100 for the greatest use of skills, 66.7 for the next greatest, 33.3 for the third greatest, and 0 for the lowest).

12 This statement addresses a finding by Lavoie and Finnie (1997) of a high rate of overqualification among master's graduates. The authors claimed that "these results may well call into question the use to which these graduates' skills have been put and the relevance of doing a master's degree..."

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What's new?

Recent reports and studies

■ DATA INITIATIVE

■ Statistical research centres

Statistics Canada, in collaboration with the Social Sciences and Humanities Research Council (SSHRC), has launched an initiative to enhance social research capacity and support policy-relevant research. Nine research data centres will open at universities across the country over the coming year. Six of the centres will receive funding from the Canadian Foundation for Innovation.

These centres are secure physical locations at which quantitative social science research will be conducted. They will operate as extensions of Statistics Canada offices, with a full-time Statistics Canada employee at each site. Data files in the centres will be stripped of all identifying information such as names, addresses and telephone numbers. Nonetheless, to ensure absolute confidentiality, the centres will be subject to the same security provisions as all other Statistics Canada offices. Researchers will work under the terms of the *Statistics Act*; the centres will be protected by a secure access system; computers holding data will not be linked to external networks; researchers must swear a legally binding oath to keep all identifiable information confidential; and the research results will be published by Statistics Canada.

Prospective researchers must submit project proposals to an adjudicating committee under the auspices of SSHRC and Statistics Canada. Approval will be based on the merit of the project and on the need to access detailed data. The centres and research projects will be evaluated periodically to assess security standards and the analysis.

The first centre opened in December 2000 at McMaster University in Hamilton, Ontario. The eight remaining ones will be hosted by the Université de Montréal, Dalhousie University, and the Universities

of Toronto, Waterloo, Calgary, Alberta, New Brunswick and British Columbia. These will open over the next six to eight months. For more information, contact Garnett Picot, Business and Labour Market Analysis Division, at (613) 951-8214; garnett.picot@statcan.ca.

■ JUST RELEASED

■ Work absences

Absence rates vary considerably among groups of workers. Factors include family circumstances, age, industry, occupation, work schedule and leave entitlements. CANSIM matrices provide work absence rates for men and women by age, education and presence of children; detailed industry and occupation groups; sector (public or private); union coverage, workplace size, job tenure and job permanency; and province, region and census metropolitan area.

New data are available on absences from work for personal reasons (illness or disability) and personal or family responsibilities. The data in these CANSIM matrices (8540-8591) update those in *Work Absence Rates, 1987 to 1998* (Catalogue no. 71-535-MPB, no. 10, \$50), which was released in July 1999.

For more information, or to enquire about concepts, methods or data quality, contact Ernest B. Akyeampong, Labour and Household Surveys Analysis Division, at (613) 951-4624; fax: (613) 951-5113; akyeern@statcan.ca.

■ Historical CALURA data

The collection and publication of union statistics under the *Corporations and Labour Unions Returns Act* (CALURA) Part II ended in 1995 with the repeal of the Act. Since 1997, the Labour Force Survey (LFS)

has been collecting monthly union data, which offer a variety of analytical possibilities unavailable in the CALURA series.

To preserve the historical CALURA data in a readily accessible form and to facilitate their use with post-1996 LFS union data, three sets of data are now available on CANSIM. The first set, covering 1976 to 1995 and referred to as the unrevised series, simply replicates the previously published union density estimates (unionization rates) using the 1980 Standard Industry Classification (SIC) and CALURA definitions and concepts applicable at the time of original publication.

The second set of data, referred to as the revised series, is aimed primarily at reconciling pre-1996 CALURA with post-1996 LFS union data. The "revised" data are recalculations of CALURA estimates based on the 1980 SIC, taking into account two changes. One is the use of only employees in the denominator (working owners of incorporated firms are excluded from the denominator, in conformity with LFS practices). The other is the use of the most recent historically revised LFS estimates. This set covers 1976 to 1995.

In the third set, union data from the revised series are converted to the North American Industry Classification System (NAICS), in line with current LFS industry reporting practices. This set spans the years 1987 to 1995.

For more information, including the issue of comparing CALURA and LFS union data, or to enquire about concepts, methods or data quality of these series, contact Ernest B. Akyeampong, Labour and Household Surveys Analysis Division, at (613) 951-4624 or Diane Galarneau, Labour Statistics Division, at (613) 951-4626. For post-1996 LFS data, contact Marc Lévesque, Labour Statistics Division, at (613) 951-2793; marc.levesque@statcan.ca.

■ **New census module**

Statistics Canada has updated the census module on its website to provide more information about the upcoming census. Both the Census of Population and the Census of Agriculture are featured. First to be posted are topics such as the history of the census, the census questions, collection procedures and job opportunities. Among the new items to be added

regularly as the census approaches are multilingual materials, including questions in different languages and information about corporate support.

Users will still have access to all the data from the 1996 Census, including favourites such as the "Nation series," "basic summary tabulations," "Community profiles" and "Canadian statistics."

The census module can be accessed from the Statistics Canada website (www.statcan.ca). For more information, contact Grant Niman, Communications Division, at (613) 951-1116; grant.niman@statcan.ca.

■ **Canadian culture, 2000**

The third edition of *Canadian Culture in Perspective: A Statistical Overview* provides a comprehensive statistical portrait of the health and vitality of cultural activities and industries in Canada. This compendium incorporates data from all surveys in Statistics Canada's Culture Statistics Program, as well as from other internal and external sources, enabling readers to track various themes and trends over time.

This edition looks at the economic impact of the culture sector, cultural activities attended by tourists, and the international trade position of the culture sector; at the social dimensions of culture, including characteristics of the cultural labour force, philanthropic behaviour, and the consumers of cultural goods and services; and at various aspects such as heritage, the performing arts and festivals, visual arts and libraries. It also explores ownership and content issues in publishing, film, broadcasting and music.

Canadian Culture in Perspective: A Statistical Overview (Catalogue no. 87-211-XIB, \$23 or Catalogue no. 87-211-XPB, \$31) is now available. For more information, contact Mary Cromie, Culture Statistics Program, at (613) 951-6864; mary.cromie@statcan.ca.

■ **Training enrolment, 1997-98**

In 1997-98, some 250,000 students were enrolled full time in trade/vocational and preparatory/special training programs and courses in community colleges, 4% less than in 1996-97.

Preparatory/special training programs and courses focus mainly on workplace skills and increasing the employability of persons entering or re-entering the workforce. These range from academic upgrading

and language training to job search instruction. They also include orientation and customized training courses for various occupations and trades. Enrolments tend to increase during economic downturns and to decrease during periods of economic and labour force growth.

The trade/vocational group consists of pre-employment/pre-apprenticeship programs designed to provide basic employment skills for entry into an occupation or apprenticeship program. Also included are upgrading courses to introduce new technology to skilled workers. In addition, this group includes combined in-class instruction and on-the-job training to registered apprentices.

The largest proportion of enrolments in trade/vocational programs are in engineering and applied sciences and business and commerce. While most fields of study saw higher enrolments in 1997-98, the health sciences and related, and social sciences and services areas decreased slightly.

To obtain more information on enrolments in full-time trade/vocational and preparatory/special training programs and courses, contact Sharon-Anne Borde, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1503; fax: (613) 951-9040; bordsha@statcan.ca. To enquire about concepts, methods or data quality, contact Karl Skof or Bernard Bourgoine, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1529; skofkar@statcan.ca or (613) 951-1506; bourber@statcan.ca, respectively; fax: (613) 951-6765.

■ *Geography catalogue*

This catalogue provides information about the geographic products and services produced by Statistics Canada. It contains short descriptions, including information on price, medium and catalogue numbers.

The 1997 *Geography Catalogue*, 1996 Census (Geography Products: Geographic Reference Products) (Catalogue no. 92-374-XIE, free), formerly available in paper format, is now available in PDF format on the Statistics Canada website (www.statcan.ca). From the "Products and services page," choose "Free publications."

For more information, contact Alex Nadeau, Geography Division, at (613) 951-4309; geohelp@statcan.ca.

■ *Neighbourhood inequality in cities*

In the nation's eight largest census metropolitan areas, earnings were increasingly concentrated in the richer neighbourhoods between 1980 and 1995, while unemployment was increasingly concentrated in the poorer neighbourhoods, according to a new study based on data from four censuses. This led to a decline in average family incomes in the poorer neighbourhoods and a marginal rise in the richer ones.

Employment income in the poorest neighbourhoods fell significantly over the 15-year reference period in Montréal, Québec, Ottawa-Hull, Toronto, Winnipeg, Calgary, Edmonton and Vancouver. The declines ranged from 11% to 33%. The poorest neighbourhoods were those in which average family incomes were in the bottom 10% of the income scale.

In contrast, in the richest neighbourhoods average earnings grew by 1% to 16%. At the same time, unemployment rose in the poorer neighbourhoods. For all cities combined, unemployment among core-aged workers—those between 25 and 54—rose from 11.2% to 18.9% in the poorest neighbourhoods, while barely changing in the richer neighbourhoods (3.3% to 4.4%).

Changes in employment and unemployment patterns were the main reason the gap between these neighbourhoods increased, as measured by average total family income (including earnings, government transfers and other income, but excluding taxes). The most notable difference was related to declines in employment and earnings in the poorer communities.

For a paper copy of *Neighbourhood Inequality in Canadian Cities* (Catalogue no. 11F0019MPE, no. 160, \$5), contact Hélène Lamadeleine at (613) 951-5231. An electronic version (Catalogue no. 11F0019MIE, no. 160, free) is also available on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Research papers (free)," then "Social conditions." For more information, or to enquire about concepts, methods or data quality, contact Garnett Picot, Business and Labour Market Analysis Division, at (613) 951-8214; garnett.picot@statcan.ca.

■ *Longitudinal data update*

Data for 1998 have been added to the Longitudinal Administrative Databank (LAD). This databank now spans 17 years, from 1982 to 1998, and contains information about individuals and census families.

The LAD consists of a 20% longitudinal sample of Canadian taxfilers. It is designed to help researchers and analysts study changes in income. The LAD provides a wide variety of income and demographic variables, such as employment income, self-employment income, registered retirement savings plan contributions, alimony, age, sex and census family composition. The large sample (4.5 million persons in 1998) ensures reliable estimates for Canada, the provinces, census metropolitan areas and several subprovincial regions, based on aggregations of postal codes.

Custom tabulations including 1998 data are now available (Catalogue no. 13C0019, variable price). For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ **Labour Force Survey (LFS)**

Harmonization with census concepts has affected the comparability of historical and current LFS occupational data. The management group was most affected, with a portion of those formerly classified as managers now most likely coded to business, finance and administrative, sales, and service occupations. Investigations are under way to improve these series. Results are expected to be available early in 2001.

Labour Force Survey Products and Services, 2000-2001 is a new catalogue that describes all Labour Force Survey products and services offered on a monthly, annual and occasional basis. For a paper or electronic copy, contact Jacques Ouellet, Labour Statistics Division, at (613) 951-4168; fax: (613) 951-2869; jacques.ouellet@statcan.ca.

■ **Low income**

Low income cut-offs (LICO) for 1999 and low income measures (LIM) for 1998, before- and after-tax, are now available. The updated thresholds for both measurements are given in a single publication that replaces the earlier two. It incorporates a detailed description of the methods used to arrive at both measurements. It also explains how base years are defined and how LICOs are updated using the Consumer Price Index.

LICOs are income thresholds (determined by an analysis of family expenditure data) below which families tend to devote a larger-than-average share of

income to the necessities of food, shelter and clothing. To reflect differences in such costs among different community and family sizes, LICOs are defined for five community-size and seven family-size categories.

LIMs, on the other hand, are relative measures of low income, set at 50% of adjusted median family income. These measures are categorized according to the number of adults and children present in families, reflecting the economies of scale inherent in family size and composition.

Although LICOs are often referred to as poverty lines, they have no official status as such, and Statistics Canada does not recommend their use for this purpose. For more information, refer to the article, "On poverty and low income" in this new publication or on Statistics Canada's website (www.statcan.ca) under "Concepts, definitions and methods."

Low-income Cutoffs from 1990 to 1999 and Low-income Measures from 1989 to 1998 (Catalogue no. 75F0002MIE-00017, free) is available at www.statcan.ca under "Products and services," "Research papers (free)." For more information, to order this report or custom tabulations, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Payroll deduction series**

Statistics Canada's Business Register Division is re-establishing the longstanding payroll deduction series, which produces a quarterly estimate of the number of businesses with employees. These are businesses that have registered a payroll deduction account with the Canada Customs and Revenue Agency (CCRA) in order to remit monies deducted from employee salaries. This series includes a small number of enterprises with multiple payroll deduction accounts.

Re-introduction of this series, which was terminated at the end of 1997, comes after extensive analysis of administrative data originating with the CCRA Payroll Deduction Account. The data are now available for every quarter since 1980.

For more information, or to enquire about concepts, methods or data quality, contact James Datey, Business Register Division, at (613) 951-0013; fax: (613) 951-0104; james.datey@statcan.ca.

■ RRSP contribution limits

Data for RRSP contribution limits (also called RRSP room) are now available. Based on 1999 tax returns filed in the spring of 2000, this databank provides information on the RRSP contribution limit available to individuals for the 2000 tax year.

The databank consists of two tables, which show the amount of room (new, unused, and total) available to taxfilers and characteristics of taxfilers with new room for the 2000 tax year. New room is the maximum amount taxfilers are eligible to contribute to registered retirement savings plans during a given tax year, based on their earned income the year before.

The data are available for Canada, the provinces and territories, cities, towns, census metropolitan areas and census divisions, as well as areas as small as forward sortation areas (the first three characters of the urban postal code) and letter carrier routes.

To order *RRSP Contribution Limits* (Catalogue no. 17C0011, variable price), or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Survey of Financial Security

The Survey of Financial Security (SFS) was conducted during May and June of 1999. It collected general demographic information on family members, more detailed information on the education, employment and income of family members 15 and older, and asset and debt information on the family as a whole. This document briefly describes the survey and presents the questionnaire used.

For more information, see *Survey of Financial Security: Update* (Catalogue no. 13F0026MIE99006) on the Statistics Canada website (www.statcan.ca). On the "Products and services" page, choose "Research papers (free)." To enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ Household spending, 1999

Canadian households spent an average \$53,500 on everything from furniture to entertainment, according to the 1999 Survey of Household Spending. Households spent about 4% more than in 1998, and

7% more than in 1997. While spending on shelter remained virtually unchanged from 1998, estimated household spending on transportation, food and personal taxes was up. Spending on heating fuels such as oil and gas rose 7% to an average \$480, owing primarily to higher natural gas prices.

Current and historical estimates have been adjusted to reflect 1996 Census population and household counts, replacing the 1991 counts used previously. All estimates have also been adjusted to reflect the income distribution of the population. This adjustment is derived from T4 tax form information from the Canada Customs and Revenue Agency.

Selected tables showing revised data from the 1996 Family Expenditure Survey and the 1997 and 1998 Survey of Household Spending will be available. Custom tabulations for these survey years may also be obtained. Public-use microdata files for the 1992 and 1996 Family Expenditure Surveys, the 1997 and 1998 Surveys of Household Spending and the historical Household Facilities and Equipment Survey will be reissued over the next several months. To enquire about the availability of replacement files, or for more information, contact Client Services, Income Statistics Division.

Three tables presenting summary-level household spending data for Canada, the provinces and territories and selected metropolitan areas, as well as dwelling characteristics and household equipment, are available free on Statistics Canada's website (www.statcan.ca). On the "Canadian statistics" page, choose "The People," then "Families, households and housing," then "Expenditures" or "Housing."

Five tables present detailed household expenditure data: *Canada, Provinces/Territories and Selected Metropolitan Areas, 1999* (Catalogue no. 62F0031XDB); *Household Income Quintile, Canada and the Provinces, 1999* (Catalogue no. 62F0032XDB); *Housing Tenure, Canada, 1999* (Catalogue no. 62F0033XDB); *Household Type, Canada, 1999* (Catalogue no. 62F0034XDB); and *Size of Area of Residence, Canada, 1999* (Catalogue no. 62F0035XDB).

Five tables present data on dwelling characteristics and household equipment: *Canada, Provinces/Territories and Selected Metropolitan Areas, 1999* (Catalogue no. 62F0041XDB); *Income Quintile, Canada, 1999* (Catalogue no. 62F0042XDB); *Housing Tenure, Canada, 1999* (Catalogue no. 62F0043XDB); *Household Type, Canada, 1999* (Catalogue no. 62F0044XDB); and *Size*

of Area of Residence, Canada, 1999 (Catalogue no. 62F0045XDB). All 10 tables are now available at \$125 each. Custom tabulations are also available.

A user guide (Catalogue no. 62F0026MIE 00005) presenting information about survey methodology, concepts, and data quality is available free on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Research papers (free)," then "Personal finance and household finance." The publication *Spending Patterns in Canada, 1999* (Catalogue no. 62-202-XIE or Catalogue no. 62-202-XPE) will be released in June 2001.

For more information about the Survey of Household Spending, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ Adult literacy in North America

Benchmarking Adult Literacy in North America: An International Comparative Study, published by Statistics Canada and Human Resources Development Canada and commissioned by the United States Department of Education, is now available. It presents 10 international indicators that allow readers to compare the literacy proficiency of North Americans with that of other populations.

The results show that Canadian adults are at an average level of literacy performance, behind the Nordic countries and the Netherlands but at par with adults in the United States, Australia and Germany.

This overall result masks important variation in the distribution of literacy skills in Canada and in the United States. In Canada, the literacy skills of adults in the bottom 25% of the population are slightly better than those observed in the United States, whereas the reverse is seen among adults in the top 25% of the population: American adults slightly outperform their Canadian peers.

The International Adult Literacy Survey was a 22-country initiative providing objective measures of adult literacy in three domains: prose literacy, document literacy and quantitative literacy.

Benchmarking Adult Literacy in North America: An International Comparative Study (Catalogue no. 89-572-XPE, \$10) is now available. An electronic version

(Catalogue no. 89-572-XIE, free) is also available on the Statistics Canada website (www.statcan.ca). From the "Products and services" page, choose "Free publications," then "Education." The report is also available on Human Resources Development Canada's website (www.hrdc-drhc.gc.ca/arb).

For more information, or to enquire about concepts, methods or data quality, contact T. Scott Murray, Culture, Tourism and the Centre for Education Statistics, at (613) 951-9035; fax: (613) 951-9040; scott.murray@statcan.ca.

■ Productivity growth, 1961 to 1999

Economic shocks with long-lasting effects, common in many industries, changed the landscape of the Canadian business sector after 1973, according to a major new study. The study examines how productivity growth was affected by these shocks and how the benefits of productivity growth were passed on to Canadians.

Over the 1961-to-1999 period, labour productivity, or output per hour worked, grew an average 2% per year. Multifactor productivity grew 1.2% per year. These gains were passed on to consumers in the form of lower relative prices. Productivity grew more quickly in the early part of the period than it did in the latter part. Productivity growth has also seen larger fluctuations, with longer lasting effects. Some were the result of industry-specific shocks. But, increasingly, they are the result of technological change, whose influence is becoming more pervasive, or of severe macro-economic shocks affecting more industries simultaneously.

The study includes an overview of standard productivity growth measures and data construction procedures. It considers in detail several underlying theoretical concepts and measurement issues. It also illustrates how productivity measures and related economic performance indicators can be used and interpreted. In addition, a number of empirical studies illustrate the uses for productivity measures.

Productivity Growth in Canada (Catalogue no. 15-204-XIE, \$35 or Catalogue no. 15-204-XPE, \$46) is now available. For more information, contact John Baldwin, Microeconomic Analysis Division, at (613) 951-8588; baldjoh@statcan.ca.

■ Employment, earnings and hours

As of March 29, 2001, Statistics Canada is discontinuing the paper format of its monthly publication on employment, earnings and hours. It will still be produced in electronic (PDF) format and be available on the Statistics Canada website (www.statcan.ca). From the "Products and services" page, choose "Fee publications," then "Labour." For more information, contact Sylvie Picard, Labour Statistics Division, at (613) 951-4090; sylvie.picard@statcan.ca.

■ WHAT'S NEW IN AGRICULTURE?

■ Farm income

This manual explains the concepts and methodology behind the various estimates of farm income published by Statistics Canada. In each case, the form of availability and appropriate uses are discussed. In addition, the methods behind the forecasts of farm income prepared by Agriculture and Agri-Food Canada are included, along with an explanation of the relationship to the farm income accounts of Statistics Canada.

Understanding Measurements of Farm Income (Catalogue no. 21-525-XIE, free), published jointly by Statistics Canada and Agriculture and Agri-Food Canada, is now available on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Free publications," then "Agriculture."

For more information, or to enquire about concepts, methods or data quality, contact the User Services and Marketing Unit, Agriculture Division, at 1 800 465-1991; fax: (613) 951-3868; agriculture@statcan.ca.

■ Farm operating revenues and expenses, 1999 (preliminary estimates)

Average operating revenues per farm increased 2.8% in 1999 to \$158,300, according to taxation records. In the same period, average operating expenses rose 4.0% to \$135,600. Operating margins were 14.4 cents per revenue dollar, down from 15.3 cents in 1998. In current dollars, average operating revenues in 1999

were 10.9% above the five-year average for 1994 to 1998, but operating margins were lower by 1.9 cents per dollar of revenue.

Higher revenues from the sale of cattle (16.0%) and greenhouse and nursery products (9.1%) accounted for most of the overall rise in average operating revenues. Average operating expenses rose mainly because of higher cattle purchases (20.3%) and interest costs (8.4%).

In terms of operating margins, dairy farms ranked first at 25.9 cents per dollar of revenue, up 1.1 cents from 1998. (Operating margin is defined as one dollar of revenue less operating expenses [before depreciation] per dollar of revenue.) Tobacco farms ranked second at 20.8 cents. These two farm types were the only ones with operating margins higher than 20 cents. Seven of the eleven major farm types posted higher operating margins in 1999. On a sales-class basis, farms with operating revenues ranging between \$100,000 and \$249,999 had the highest operating margins, estimated at 20.2 cents, down from 21.2 cents in 1998.

These estimates cover unincorporated farms with gross operating revenues of \$10,000 and over, and corporations with total farm sales of \$25,000 and over for which 51% or more of their sales come from agricultural activities. Estimates also include communal farming organizations.

For custom data requests, contact Client Services, Agriculture Division, at (613) 951-5027. For more information, or to enquire about concepts, methods or data quality, contact Daniel Michaud, Agriculture Division, at (613) 951-0701; daniel.michaud@statcan.ca.

■ Analysis Bulletins

Factors Associated with Female Employment Rates in Rural and Small Town Canada (No. 9)

This bulletin shows that significant differences exist in labour market experiences between women in rural and small town labour markets and women in the labour markets of larger urban centres. However, contrary to expectations, these contrasts do not appear to be the result of differences in access to child-care facilities, in returns to human capital, or in attitudes toward the role of women in labour markets.

Older women in rural and small town areas are more likely to be working than women of the same age in larger urban centres, when all other factors are held constant. Also, women in larger urban centres are less likely to be working in a given year if the income of the household was higher in the previous year; this relationship is significantly less pronounced for rural areas.

Population Structure and Change in Predominantly Rural Regions (No. 10)

This bulletin uses census data to trace changes in the rural population between 1981 and 1996, nationally and provincially.

In 1996, some 31% of Canada's population, about 9 million people, lived in predominantly rural regions, compared with 34% in 1981. In three areas of the country more than one-half of the population lived in predominantly rural regions: the Yukon and Northwest Territories; all four Atlantic provinces; and Saskatchewan. The fastest growing rural regions between 1991 and 1996 were those adjacent to metropolitan areas.

Rural Youth Migration between 1971 and 1996 (No. 11)

This bulletin uses census data to show the extent of the migration of youths from rural areas between 1971 and 1996, at the national and provincial levels.

All provinces saw net outflows of young people from their rural areas over the period, notably Saskatchewan and the four Atlantic provinces. Newfoundland and Prince Edward Island were particularly affected. The provinces with the smallest net outflows were Alberta and British Columbia. At the same time, urban areas experienced a net inflow of youths everywhere but the Atlantic provinces. Urban areas in Alberta incurred the largest net inflows.

These bulletins (Catalogue no. 21-006-XIE, nos. 9, 10 and 11, free), published in collaboration with the Rural Secretariat of Agriculture and Agri-Food Canada, are part of a series of analysis bulletins profiling trends in rural Canada, and are available on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Free publications," then "Agriculture." To order data, or

for general information, call 1 800 465-1991. For more information, contact Ray D. Bollman, Agriculture Division, at (613) 951-3747; fax: (613) 951-3868; bollman@statcan.ca.

■ UPCOMING CONFERENCE

**Economic Conference 2001:
Economic and Social Trends in a
Dynamic Economy
June 4-5, 2001, Ottawa**

Statistics Canada's annual Economic Conference, to be held at the Ottawa Congress Centre, provides a forum for the exchange of empirical research among the business, government, research and labour communities. The conference is also a means to promote economic and socio-economic analysis while subjecting existing data to critical assessment.

Nations and their economies are constantly evolving and adapting to change. In recent years, unprecedented economic growth, especially in North America, has had a significant influence on businesses, employment, labour markets and social structure. Globalization and trade liberalization have affected various sectors of the economy and the people involved. Protection of the environment and human health have remained in the forefront of public debates on issues related to technological and biotechnological developments. The impressive growth in the use of the Internet has influenced communication, transportation, education, health services, self-employment, trade and operation of businesses.

Economic Conference 2001 will include four plenary sessions featuring guest speakers prominent in their fields. It will also include over 50 presentations offering new perspectives on economic growth and employment, social and demographic adjustments to change, sustainable development, and regional perspectives.

For more information, contact Conference Planning Services, Statistics Canada, at (613) 951-1135; fax: (613) 951-5544; neverut@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Consumer Finances

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending (replaces Household Facilities and Equipment Survey and Family Expenditure Survey)

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General social survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusted Pension Funds

Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

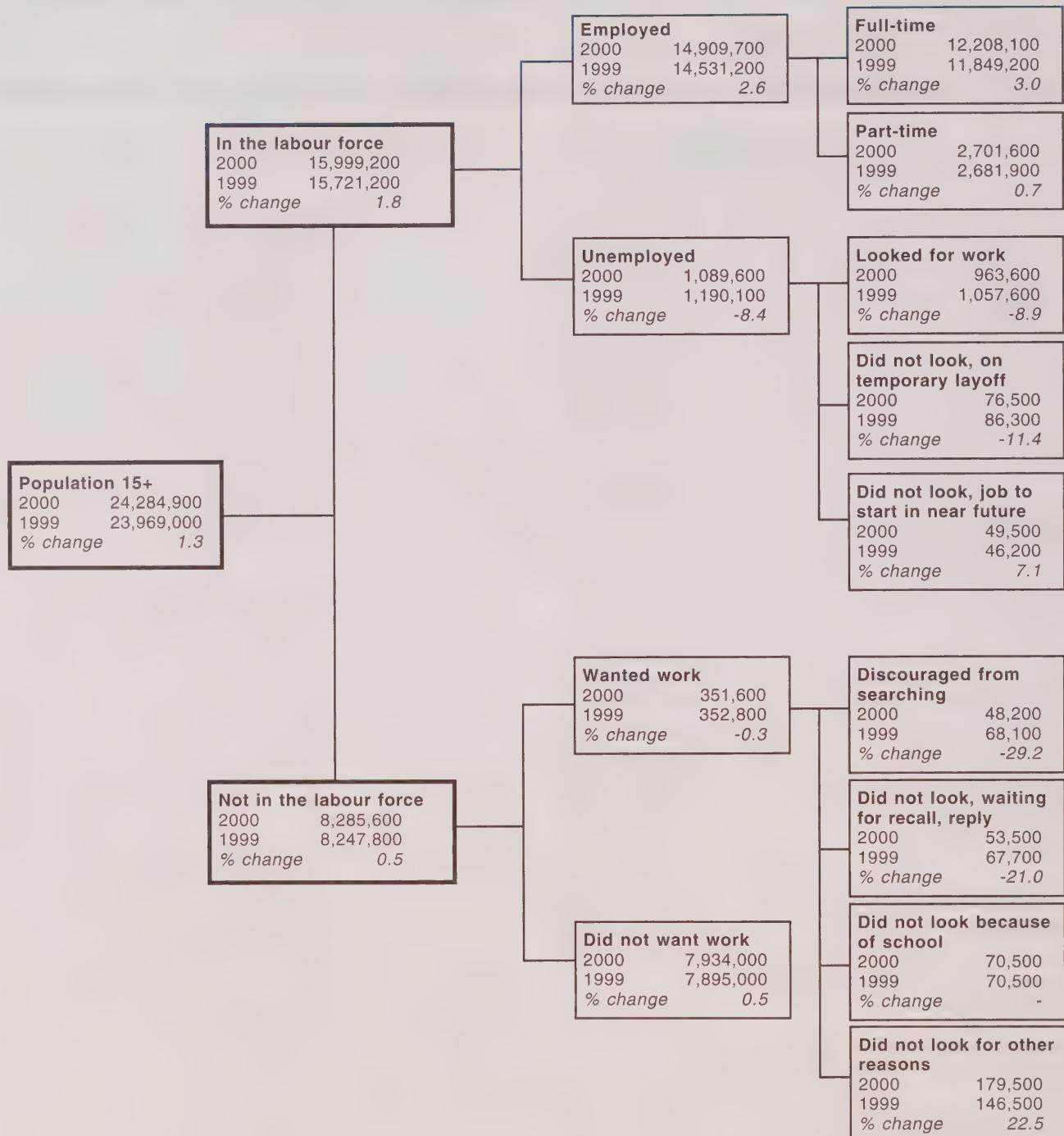
Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Bill Magnus
(613) 951-4577

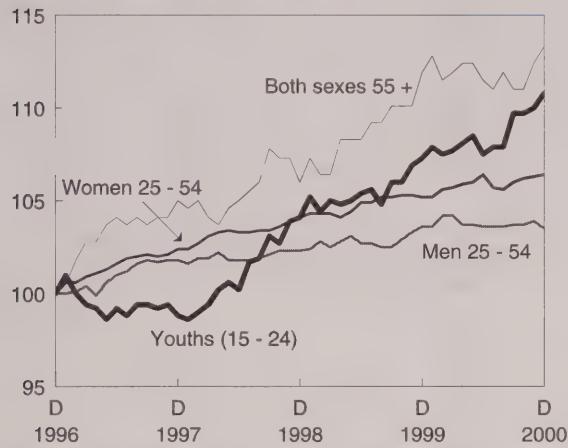
Labour force status of Canada's working-age population



Source: Labour Force Survey, annual averages

In 2000, the employment rates for youths and core-age women increased the most.

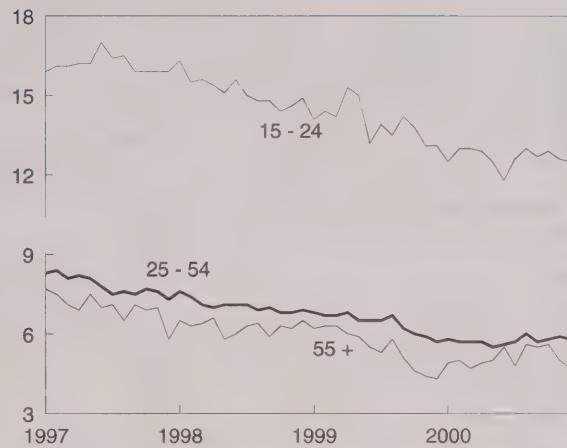
Employment rate index, December 1996=100



Source: Labour Force Survey, seasonally adjusted

The youth unemployment rate, albeit still much higher than that of adults, continued its downward trend.

Unemployment rate (%)



Source: Labour Force Survey, seasonally adjusted

In percentage terms, employment growth outpaced population growth for all but core-age men.

	December level			December-to-December change			
	1996	1999	2000	1996 to 2000	1999 to 2000	1996 to 2000	1999 to 2000
						'000	%
Population 15 +	23,178.7	24,111.4	24,435.3	1,256.6	323.9	5.4	1.3
Youths (15 - 24)	3,946.3	4,052.2	4,084.1	137.8	31.9	3.5	0.8
Men 25 - 54	6,663.5	6,871.8	6,950.2	286.7	78.4	4.3	1.1
Women 25 - 54	6,686.4	6,889.6	6,955.5	269.1	65.9	4.0	1.0
Both sexes 55 +	5,882.6	6,297.8	6,445.5	562.9	147.7	9.6	2.3
Employment 15 +	13,518.7	14,747.5	15,066.7	1,548.0	319.2	11.5	2.2
Youths (15 - 24)	2,042.5	2,254.1	2,344.4	301.9	90.3	14.8	4.0
Men 25 - 54	5,519.8	5,895.7	5,954.1	434.3	58.4	7.9	1.0
Women 25 - 54	4,674.0	5,062.8	5,177.5	503.5	114.7	10.8	2.3
Both sexes 55 +	1,282.4	1,534.8	1,590.7	308.3	55.9	24.0	3.6
Unemployment 15 +	1,459.6	1,074.9	1,103.7	-355.9	28.8	-24.4	2.7
Youths (15 - 24)	384.2	340.0	335.6	-48.6	-4.4	-12.6	-1.3
Men 25 - 54	530.0	362.9	366.8	-163.2	3.9	-30.8	1.1
Women 25 - 54	435.0	302.2	323.5	-111.5	21.3	-25.6	7.0
Both sexes 55 +	110.4	69.7	78.0	-32.4	8.3	-29.3	11.9

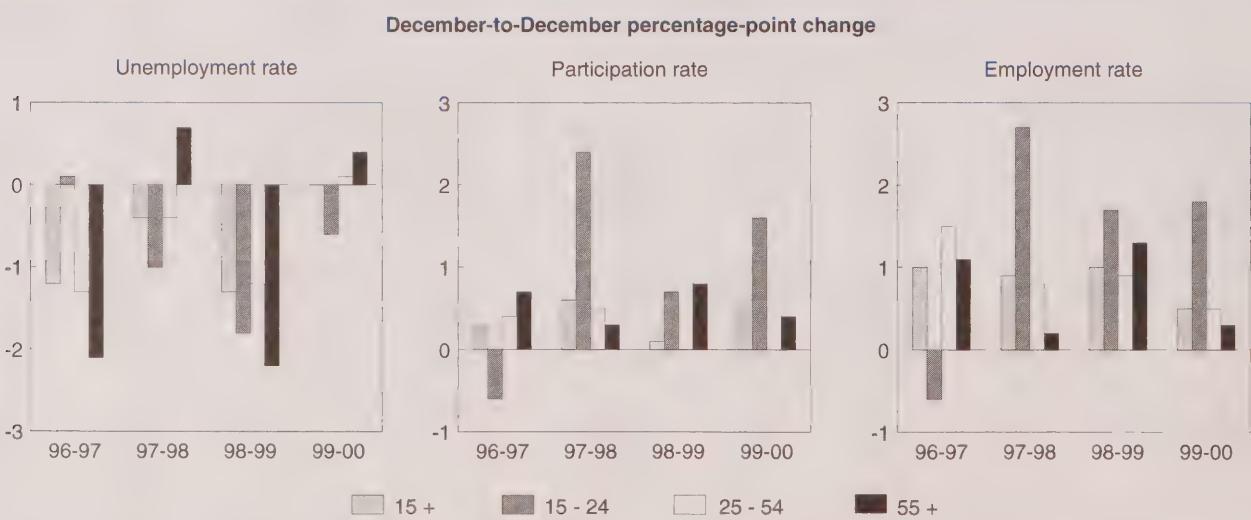
Source: Labour Force Survey, seasonally adjusted

Rising labour force participation has nudged up unemployment rates for older persons and core-age women.

	December level			December-to-December change	
	1996	1999	2000	1996 to 2000	1999 to 2000
				%	%-point
Unemployment rate 15 +	9.7	6.8	6.8	-2.9	-
Youths (15 - 24)	15.8	13.1	12.5	-3.3	-0.6
Men 25 - 54	8.8	5.8	5.8	-3.0	-
Women 25 - 54	8.5	5.6	5.9	-2.6	0.3
Both sexes 55 +	7.9	4.3	4.7	-3.2	0.4
Participation rate 15 +	64.6	65.6	66.2	1.6	0.6
Youths (15 - 24)	61.5	64.0	65.6	4.1	1.6
Men 25 - 54	90.8	91.1	90.9	0.1	-0.2
Women 25 - 54	76.4	77.9	79.1	2.7	1.2
Both sexes 55 +	23.7	25.5	25.9	2.2	0.4
Employment rate 15 +	58.3	61.2	61.7	3.4	0.5
Youths (15 - 24)	51.8	55.6	57.4	5.6	1.8
Men 25 - 54	82.8	85.8	85.7	2.9	-0.1
Women 25 - 54	69.9	73.5	74.4	4.5	0.9
Both sexes 55 +	21.8	24.4	24.7	2.9	0.3

Source: Labour Force Survey, seasonally adjusted

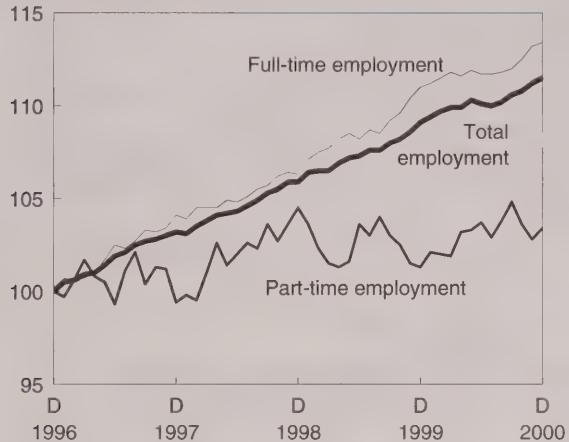
For three years in a row, youth employment rates have increased the most.



Source: Labour Force Survey, seasonally adjusted

In the long term, full-time employment growth has far exceeded part-time, but in 2000, full- and part-time growth rates were almost the same.

December 1996=100



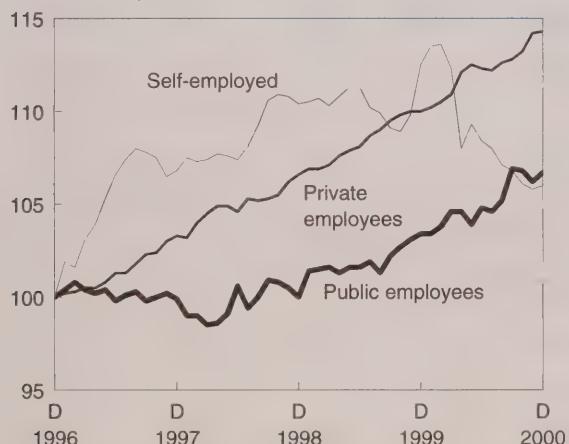
Source: Labour Force Survey, seasonally adjusted

	Employment	Full-time	Part-time
'000			
December level			
1996	13,518.7	10,899.8	2,618.8
1999	14,747.5	12,095.4	2,652.1
2000	15,066.7	12,358.7	2,708.0
Absolute change			
1996 to 2000	1,548.0	1,458.9	89.2
1999 to 2000	319.2	263.3	55.9
%			
Percentage change			
1996 to 2000	11.5	13.4	3.4
1999 to 2000	2.2	2.2	2.1

Source: Labour Force Survey, seasonally adjusted

For the first time since 1986, self-employment fell in 2000.

December 1996=100

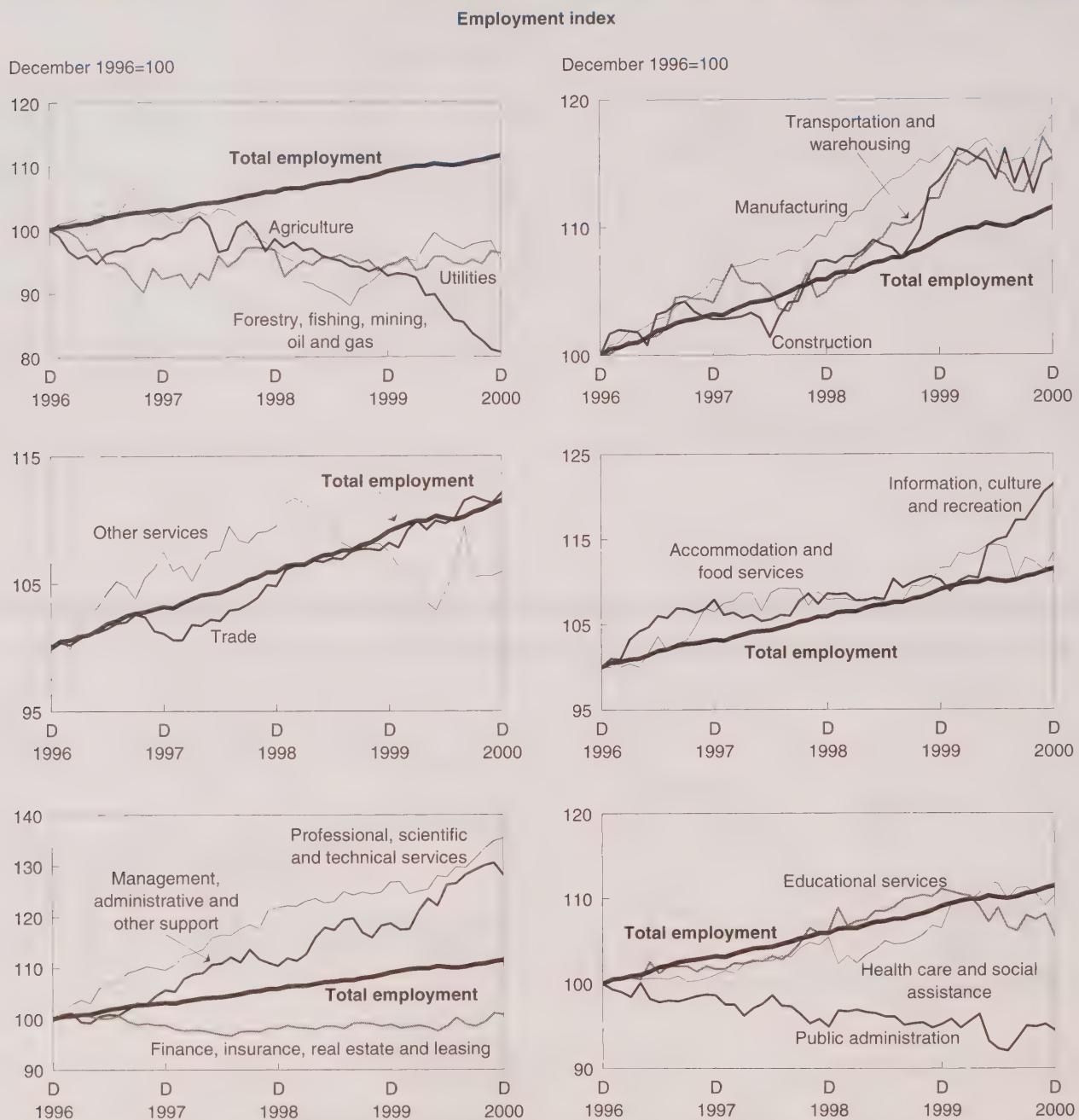


Source: Labour Force Survey, seasonally adjusted

	Total employment	Employees		
		Public	Private	Self-employed
'000				
December level				
1996	13,518.7	2,655.3	8,633.4	2,230.0
1999	14,747.5	2,745.0	9,493.5	2,509.0
2000	15,066.7	2,833.5	9,869.9	2,363.3
Absolute change				
1996 to 2000	1,548.0	178.2	1,236.5	133.3
1999 to 2000	319.2	88.5	376.4	-145.7
%				
Percentage change				
1996 to 2000	11.5	6.7	14.3	6.0
1999 to 2000	2.2	3.2	4.0	-5.8

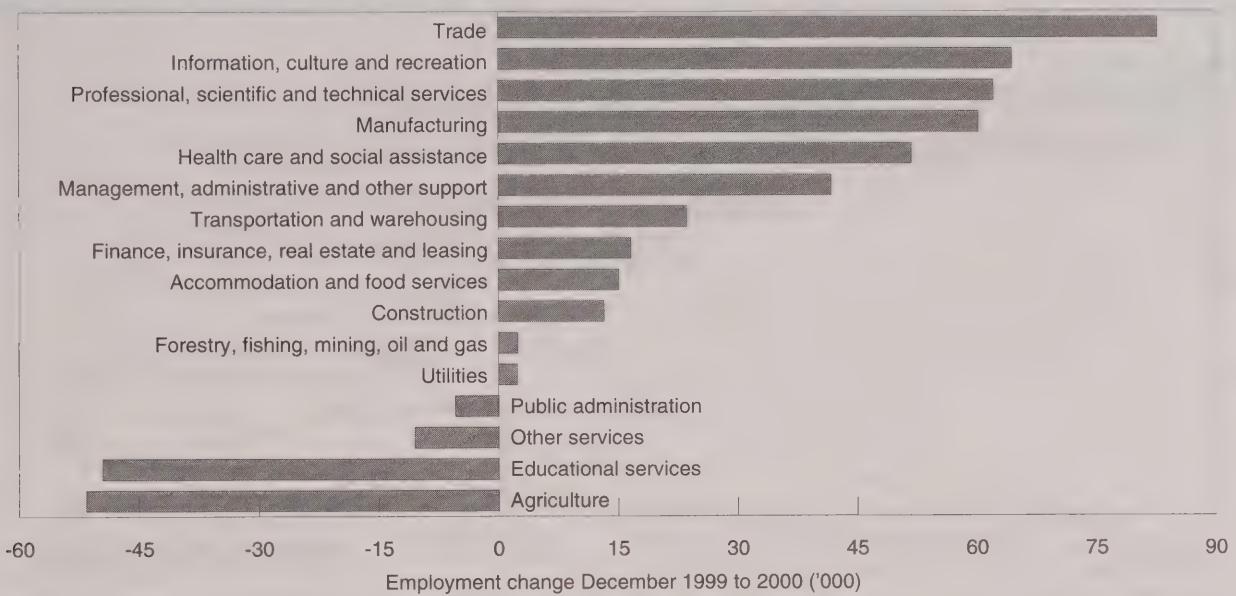
Source: Labour Force Survey, seasonally adjusted

Over the last four years, employment growth has been strong in both manufacturing and trade, Canada's two largest industries. In 2000, gains were also significant in professional, scientific and technical services, and information, culture and recreation, among others.



Source: Labour Force Survey, seasonally adjusted

The top three growth industries in 2000 were in the service sector.

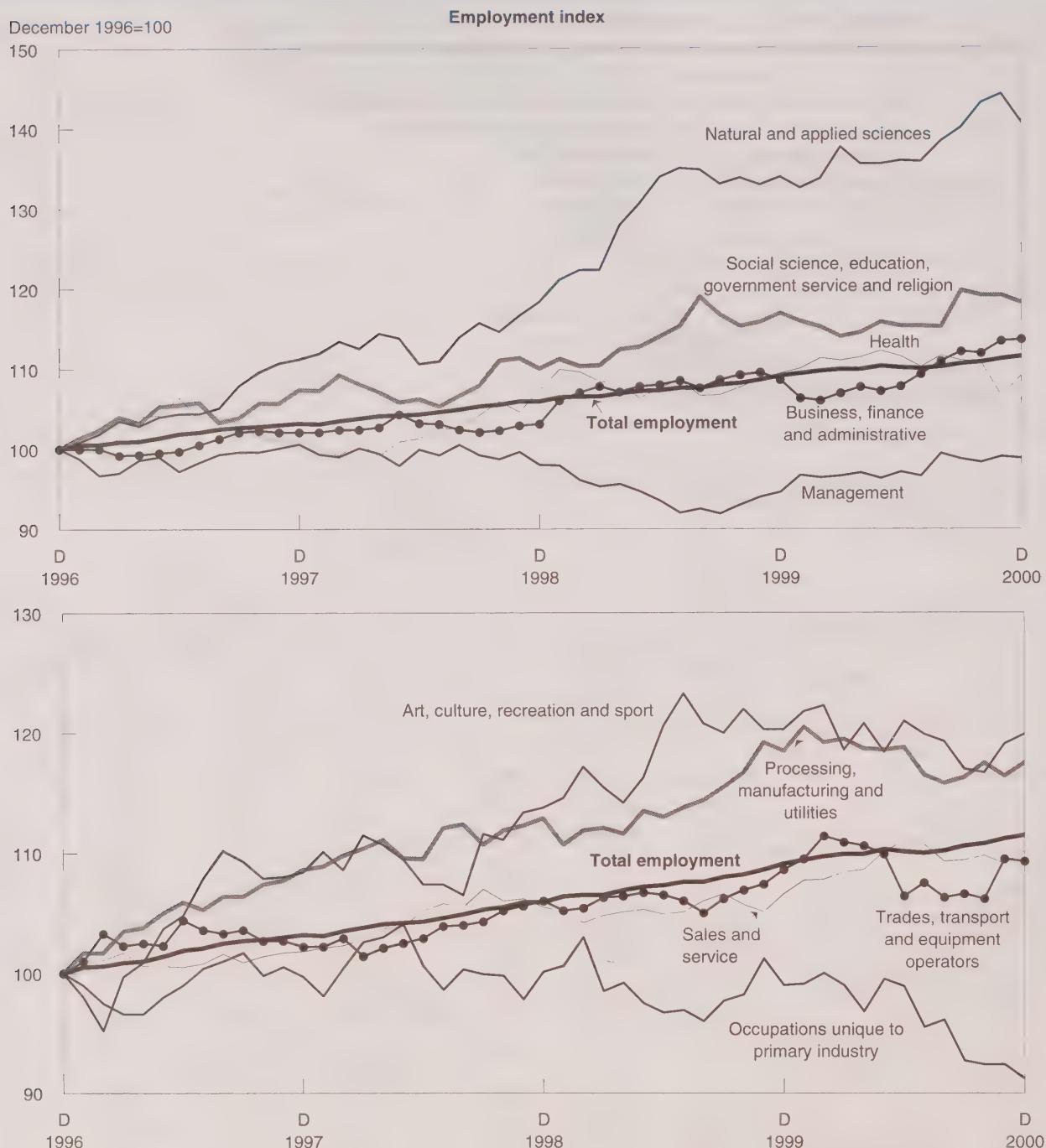


Source: Labour Force Survey, seasonally adjusted

	December level			December-to-December change			
	1996	1999	2000	1996 to 2000	1999 to 2000	1996 to 2000	1999 to 2000
			'000		'000		%
All industries	13,518.7	14,747.5	15,066.7	1,548.0	319.2	11.5	2.2
Goods-producing							
Agriculture	3,517.1	3,865.3	3,891.8	374.7	26.5	10.7	0.7
Forestry, fishing, mining, oil and gas	430.7	399.1	347.5	-83.2	-51.6	-19.3	-12.9
Utilities	291.8	275.3	277.7	-14.1	2.4	-4.8	0.9
Construction	122.3	115.4	117.7	-4.6	2.3	-3.8	2.0
Manufacturing	711.0	807.4	820.6	109.6	13.2	15.4	1.6
Services-producing							
Trade	1,961.3	2,268.2	2,328.4	367.1	60.2	18.7	2.7
Transportation and warehousing	10,001.6	10,882.2	11,174.9	1,173.3	292.7	11.7	2.7
Finance, insurance, real estate and leasing	2,100.0	2,271.7	2,354.4	254.4	82.7	12.1	3.6
Professional, scientific and technical services	681.0	764.2	787.8	106.8	23.6	15.7	3.1
Management, administrative and other support	875.1	865.3	881.9	6.8	16.6	0.8	1.9
Educational services	875.1	865.3	881.9	6.8	16.6	0.8	1.9
Health care and social assistance	926.5	988.6	1,001.7	258.2	62.1	35.4	6.7
Information, culture and recreation	436.0	517.5	559.2	123.2	41.7	28.3	8.1
Accommodation and food services	577.2	636.2	700.6	123.4	64.4	21.4	10.1
Other services	851.9	950.6	965.7	113.8	15.1	13.4	1.6
Public administration	659.7	708.9	698.4	38.7	-10.5	5.9	-1.5

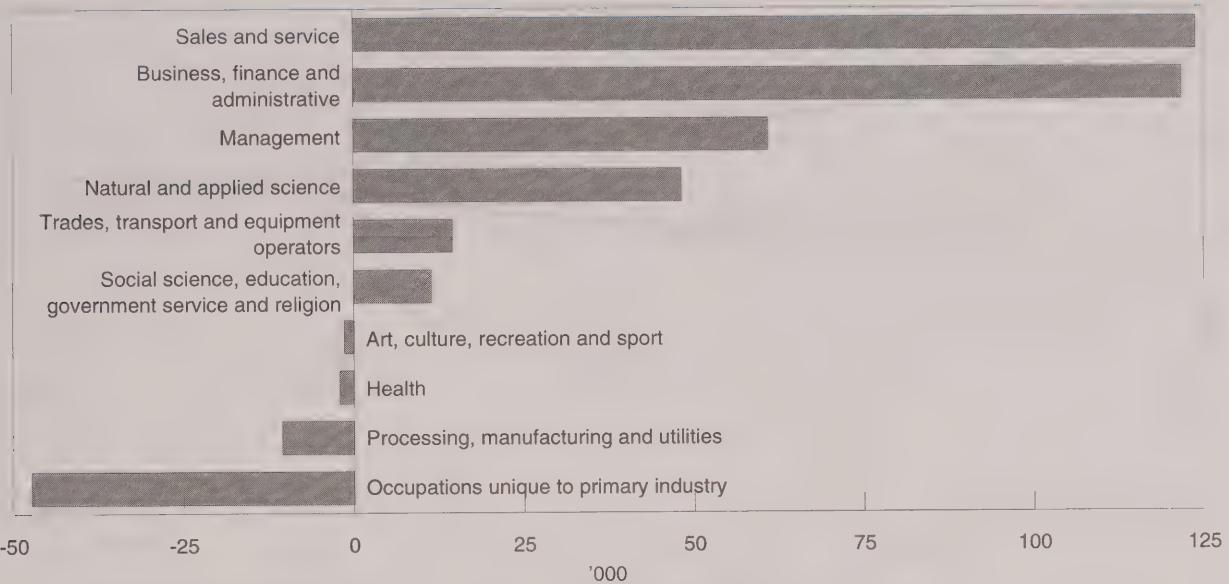
Source: Labour Force Survey, seasonally adjusted

Over the last four years, natural and applied science occupations increased the most in percentage terms. This group includes computer programmers, systems analysts and computer engineers.



Source: Labour Force Survey, seasonally adjusted

With gains in the service industries, sales and service occupations, as well as business, finance and administrative jobs, increased the most. The largest decline occurred in occupations unique to primary industry, related to the drop in agriculture.

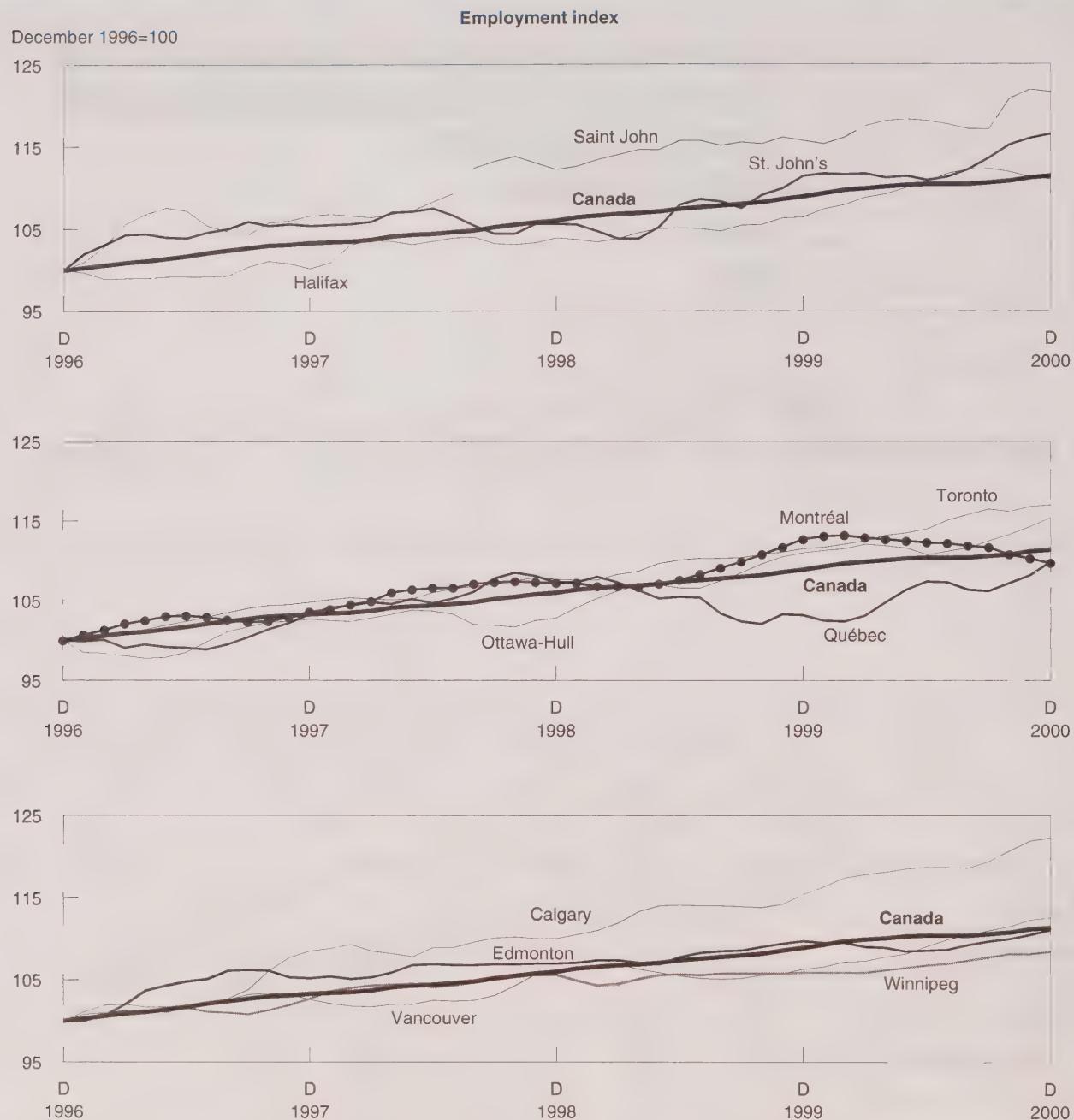


Source: Labour Force Survey, seasonally adjusted

	December level			December-to-December change			
	1996	1999	2000	1996 to 2000	1999 to 2000	1996 to 2000	1999 to 2000
			'000		'000		%
All occupations	13,518.7	14,747.5	15,066.7	1,548.0	319.2	11.5	2.2
Management	1,467.4	1,388.2	1,449.1	-18.3	60.9	-1.2	4.4
Business, finance and administrative	2,415.2	2,623.0	2,744.8	329.6	121.8	13.6	4.6
Natural and applied sciences	701.8	939.4	987.6	285.8	48.2	40.7	5.1
Health	706.9	773.6	771.5	64.6	-2.1	9.1	-0.3
Social science, education, government service and religion	869.9	1,016.7	1,028.1	158.2	11.4	18.2	1.1
Art, culture, recreation and sport	349.3	420.1	418.7	69.4	-1.4	19.9	-0.3
Sales and service	3,404.1	3,628.0	3,751.9	347.8	123.9	10.2	3.4
Trades, transport and equipment operators	1,962.4	2,130.4	2,144.9	182.5	14.5	9.3	0.7
Occupations unique to primary industry	603.7	597.9	550.6	-53.1	-47.3	-8.8	-7.9
Processing, manufacturing and utilities	1,038.0	1,230.0	1,219.5	181.5	-10.5	17.5	-0.9

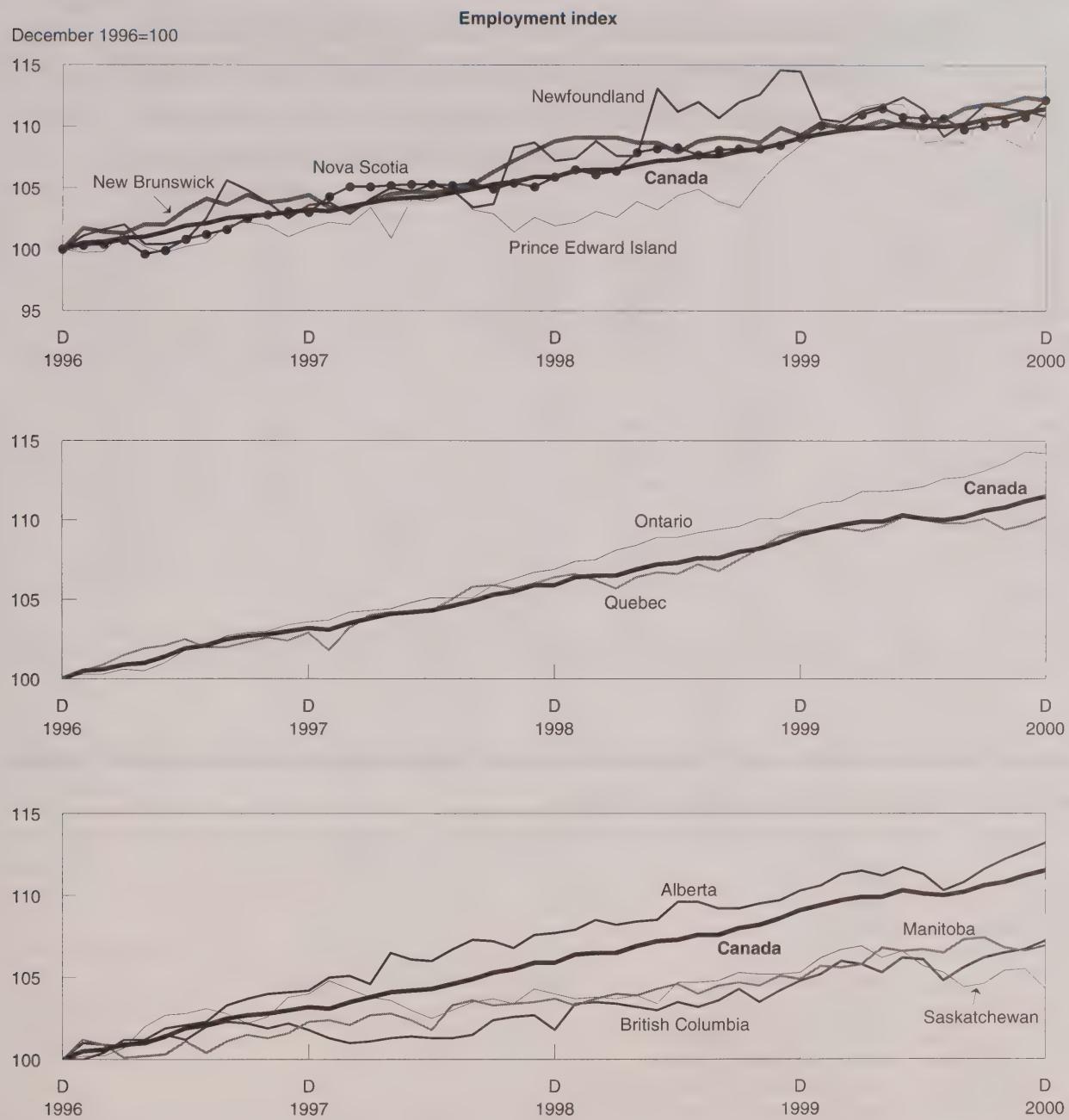
Source: Labour Force Survey, seasonally adjusted

Since the strong upward trend began in 1997, employment in the largest three cities in the Atlantic region has increased at or above the national level.



Source: Labour Force Survey, seasonally adjusted, three-month moving average

In percentage terms, job growth was strongest in Ontario in 2000.



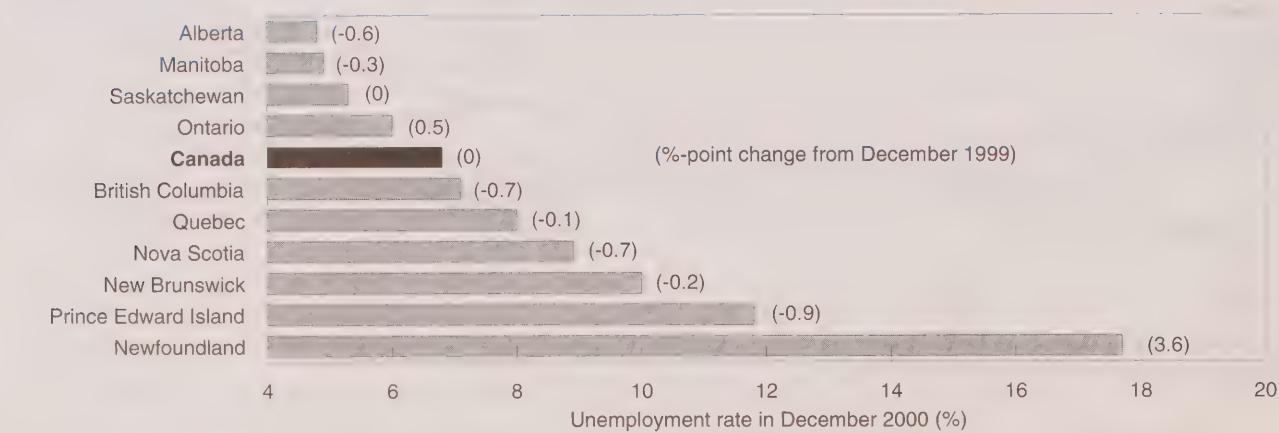
Source: Labour Force Survey, seasonally adjusted

Almost 6 in 10 newly employed people lived in Ontario.

	December level			December-to-December change			
	1996	1999	2000	1996 to 2000	1999 to 2000	1996 to 2000	1999 to 2000
				'000	'000	%	%
Employed							
Canada	13,518.7	14,747.5	15,066.7	1,548.0	319.2	11.5	2.2
Newfoundland	184.5	211.2	204.7	20.2	-6.5	10.9	-3.1
Prince Edward Island	58.7	63.7	65.3	6.6	1.6	11.2	2.5
Nova Scotia	379.3	413.9	425.6	46.3	11.7	12.2	2.8
New Brunswick	301.4	329.4	338.3	36.9	8.9	12.2	2.7
Quebec	3,133.0	3,425.6	3,451.4	318.4	25.8	10.2	0.8
Ontario	5,217.5	5,774.0	5,960.4	742.9	186.4	14.2	3.2
Manitoba	520.4	546.0	556.3	35.9	10.3	6.9	1.9
Saskatchewan	459.5	483.9	479.2	19.7	-4.7	4.3	-1.0
Alberta	1,424.3	1,571.7	1,613.0	188.7	41.3	13.2	2.6
British Columbia	1,840.0	1,928.2	1,972.5	132.5	44.3	7.2	2.3
Unemployed							
Canada	1,459.6	1,074.9	1,103.7	-355.9	28.8	-24.4	2.7
Newfoundland	48.5	34.6	43.9	-4.6	9.3	-9.5	26.9
Prince Edward Island	11.0	9.3	8.7	-2.3	-0.6	-20.9	-6.5
Nova Scotia	53.8	44.1	41.8	-12.0	-2.3	-22.3	-5.2
New Brunswick	44.8	37.3	37.4	-7.4	0.1	-16.5	0.3
Quebec	438.6	300.9	301.9	-136.7	1.0	-31.2	0.3
Ontario	517.5	338.3	382.3	-135.2	44.0	-26.1	13.0
Manitoba	41.0	29.7	28.5	-12.5	-1.2	-30.5	-4.0
Saskatchewan	28.1	27.1	26.9	-1.2	-0.2	-4.3	-0.7
Alberta	92.3	90.3	82.0	-10.3	-8.3	-11.2	-9.2
British Columbia	184.0	163.2	150.2	-33.8	-13.0	-18.4	-8.0

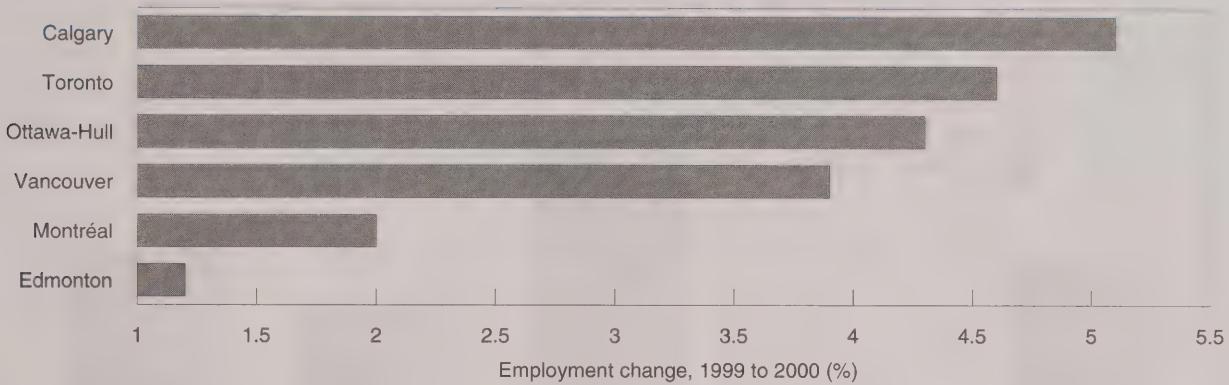
Source: Labour Force Survey, seasonally adjusted

Unemployment rates fell in most provinces in 2000.



Source: Labour Force Survey, seasonally adjusted

Of Canada's largest cities, the average level of employment increased most in Calgary and Toronto.



Source: Labour Force Survey, annual averages

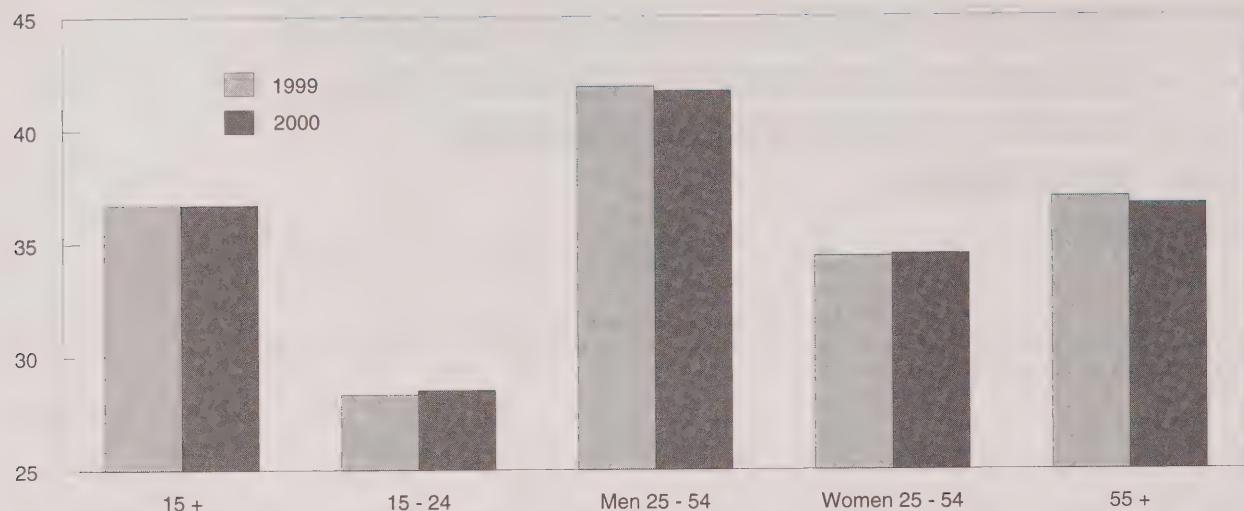
	Annual average			Change			
	1996	1999	2000	1996 to 2000	1999 to 2000	1996 to 2000	1999 to 2000
				'000	'000	%	%
Canada	13,462.6	14,531.2	14,909.7	1,447.1	378.5	10.7	2.6
St. John's	77.0	80.1	84.3	7.3	4.2	9.5	5.2
Halifax	164.1	174.8	184.0	19.9	9.2	12.1	5.3
Saint John	53.1	59.3	61.0	8.0	1.7	15.1	2.9
Chicoutimi-Jonquière	62.1	67.5	67.4	5.3	-0.1	8.5	-0.1
Québec	312.1	319.6	326.6	14.5	7.0	4.6	2.2
Trois-Rivières	61.4	61.9	62.1	0.7	0.2	1.1	0.3
Sherbrooke	66.0	69.6	73.1	7.1	3.5	10.8	5.0
Montréal	1,524.3	1,656.2	1,689.9	165.6	33.7	10.9	2.0
Ottawa-Hull	496.9	543.8	567.0	70.1	23.2	14.1	4.3
Sudbury	73.6	72.0	76.0	2.4	4.0	3.3	5.6
Oshawa	130.2	147.8	148.6	18.4	0.8	14.1	0.5
Toronto	2,134.7	2,390.8	2,499.8	365.1	109.0	17.1	4.6
Hamilton	303.7	325.0	345.3	41.6	20.3	13.7	6.2
St. Catharines-Niagara	172.1	178.4	193.2	21.1	14.8	12.3	8.3
London	195.1	211.3	218.1	23.0	6.8	11.8	3.2
Windsor	135.9	146.2	154.2	18.3	8.0	13.5	5.5
Kitchener-Waterloo	199.0	218.8	223.5	24.5	4.7	12.3	2.1
Thunder Bay	60.1	60.5	61.2	1.1	0.7	1.8	1.2
Winnipeg	330.4	345.7	351.9	21.5	6.2	6.5	1.8
Regina	98.5	104.8	104.4	5.9	-0.4	6.0	-0.4
Saskatoon	107.0	113.3	116.7	9.7	3.4	9.1	3.0
Calgary	452.4	519.3	545.6	93.2	26.3	20.6	5.1
Edmonton	440.5	483.1	488.9	48.4	5.8	11.0	1.2
Vancouver	948.6	1,005.4	1,044.4	95.8	39.0	10.1	3.9
Victoria	143.5	154.2	153.6	10.1	-0.6	7.0	-0.4

Source: Labour Force Survey

Key labour and income facts

Average usual hours were unchanged in 2000. Over the year, the average work week was 36.7 hours.

Usual hours, main job



Source: Labour Force Survey, annual averages

The distribution of work hours was also stable in 2000. Only 59% of all workers put in the standard 35 to 40 hours per week at their main job.

%

40

30

20

10

0



1 - 14

15 - 29

30 - 34

35 - 39

40

41 - 49

50 +

Usual hours, main job

Source: Labour Force Survey, annual averages

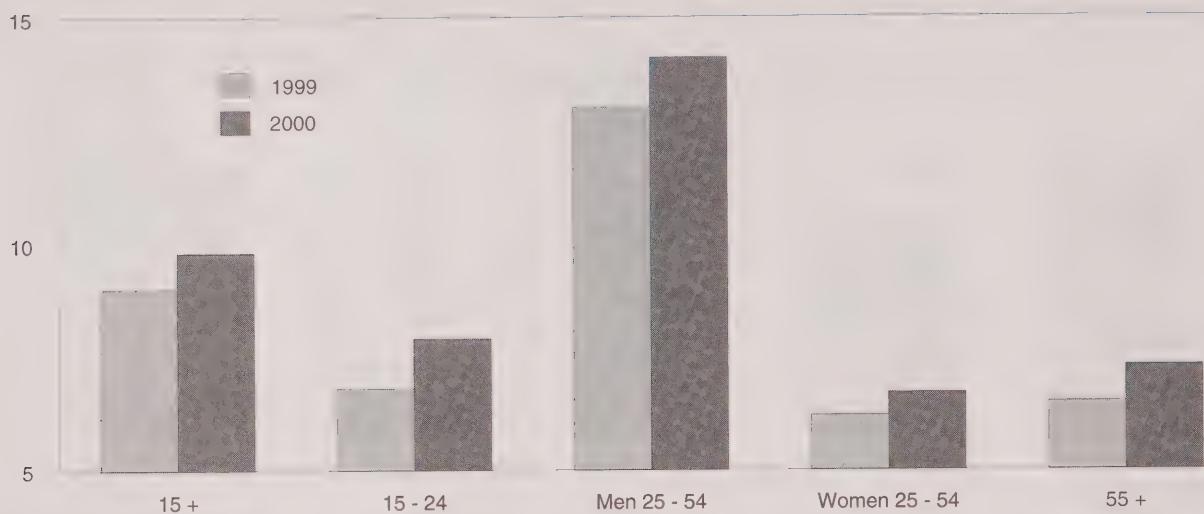
Workers in primary industries and occupations worked the longest hours in 2000.

	Employed	Usual hours, main job								Total ('000)	Avg.
		1-14	15-29	30-34	35-39	40	41-49	50+			
		'000								hours	
Total	14,909.7	871.5	1,830.1	984.0	3,063.4	5,716.9	940.8	1,503.1	547,052.8	36.7	
Industry											
Agriculture	372.6	33.0	37.7	25.9	17.0	79.5	26.4	153.2	16,787.4	45.1	
Forestry, fishing, mining, oil and gas	283.0	5.8	8.9	6.2	23.0	136.7	33.9	68.5	12,624.3	44.6	
Utilities	116.4	-	2.2	5.9	43.0	59.6	2.9	2.4	4,459.2	38.3	
Construction	815.6	23.8	44.2	36.9	67.6	400.4	86.2	156.4	33,366.5	40.9	
Manufacturing	2,280.2	24.6	53.5	44.2	288.1	1,528.6	232.0	109.2	90,733.5	39.8	
Trade	2,318.1	183.2	431.4	174.9	304.3	868.7	151.0	204.5	80,409.3	34.7	
Transportation and warehousing	779.8	20.9	67.6	37.1	87.7	342.0	58.0	166.5	32,182.0	41.3	
Finance, insurance, real estate and leasing	867.0	31.8	91.6	49.8	333.7	245.7	34.2	80.1	31,956.4	36.9	
Professional, scientific and technical services	945.9	40.7	79.9	46.9	222.5	378.4	45.5	132.1	36,265.3	38.3	
Management, administrative and other support	546.2	53.1	84.3	50.6	77.2	198.0	35.9	47.3	18,743.0	34.3	
Educational services	974.8	94.2	148.4	100.3	288.8	262.3	30.6	50.2	32,008.5	32.8	
Health care and social assistance	1,526.4	87.4	309.1	161.4	525.5	300.7	48.9	93.4	51,703.4	33.9	
Information, culture and recreation	665.5	67.9	87.8	44.8	169.8	217.3	27.4	50.5	22,732.9	34.2	
Accommodation and food services	960.6	118.8	251.9	109.3	104.5	246.4	40.0	89.6	30,551.4	31.8	
Other services	695.8	66.8	93.0	59.4	84.7	246.7	57.6	87.6	24,798.9	35.6	
Public administration	761.7	19.1	38.5	30.4	426.0	205.8	30.3	11.6	27,730.9	36.4	
Occupation											
Management	1,431.7	25.1	57.9	49.6	285.1	561.6	116.9	335.6	61,066.5	42.7	
Business, finance and administrative	2,646.4	140.6	305.8	166.4	954.5	902.1	84.6	92.4	92,643.8	35.0	
Natural and applied sciences	968.3	13.8	30.2	22.9	329.0	455.1	47.4	69.8	37,882.1	39.1	
Health	780.4	34.6	170.1	90.3	256.5	150.7	27.7	50.4	26,586.7	34.1	
Social science, education, government service and religion	1,013.6	58.4	133.9	91.7	322.4	280.7	39.8	86.7	35,793.3	35.3	
Art, culture, recreation and sport	416.7	63.0	66.2	35.2	81.7	115.7	14.0	40.9	13,474.5	32.3	
Sales and service	3,723.0	435.1	883.4	385.4	520.8	1,088.7	184.7	225.0	117,517.4	31.6	
Trades, transport and equipment operators	2,130.1	46.6	103.2	81.7	178.3	1,137.8	235.2	347.3	87,624.7	41.1	
Occupations unique to primary industry	577.5	40.5	45.8	33.7	27.9	164.6	49.2	215.7	26,053.3	45.1	
Processing, manufacturing and utilities	1,221.9	13.7	33.5	27.1	107.1	859.9	141.3	39.3	48,410.5	39.6	

Source: Labour Force Survey, annual averages

In 2000, an average 10% of employees put in paid overtime, up slightly from the year before. The most notable increases were among youths and men aged 25 to 54.

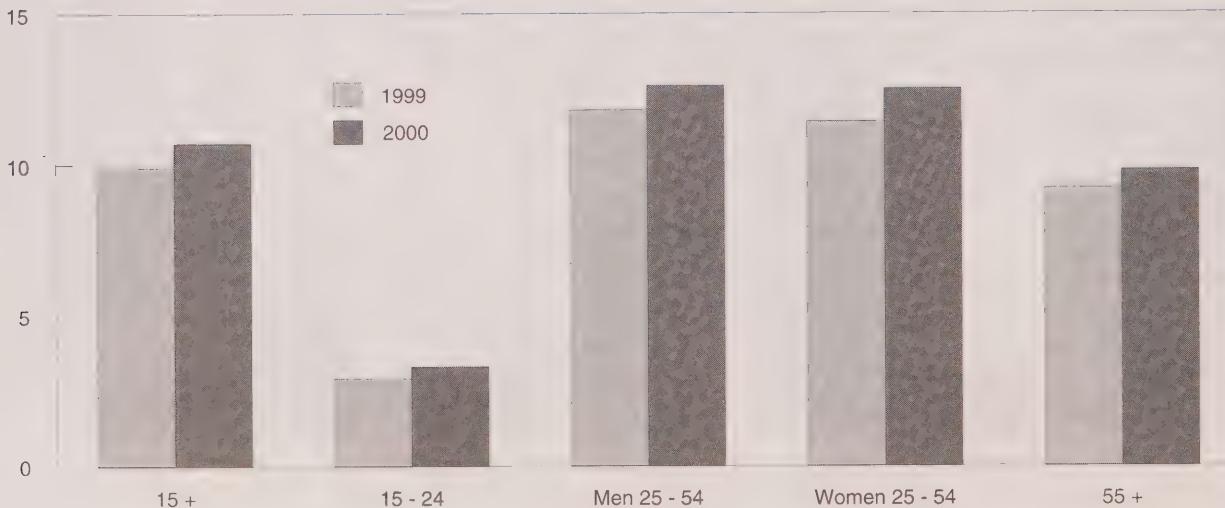
Working paid overtime (%)



Source: Labour Force Survey, annual averages

Unpaid overtime was also more common in 2000.

Working unpaid overtime (%)



Source: Labour Force Survey, annual averages

While overtime workers in the goods sector tended to be paid for their extra hours, most workers in the service sector were not paid for any extra hours.

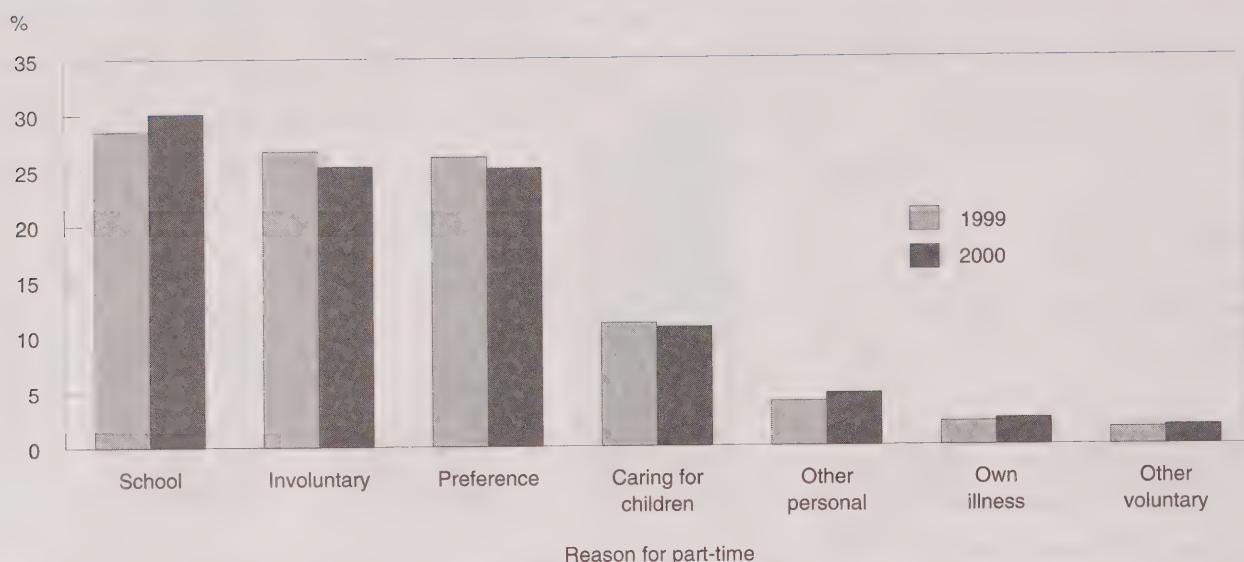
	Proportion of workers putting in overtime								
	Employees at work		2000			Change, 1999 to 2000			
	Total	Overtime	Total	Paid	Unpaid	Total	Paid	Unpaid	
	'000						%		
Total	11,578.5	2,301.1	19.9	9.8	10.7	1.4	0.8	0.8	
Industry									
Agriculture	118.0	11.3	9.6	5.7	3.7	-	-	-	0.1
Forestry, fishing, mining, oil and gas	213.6	59.0	27.6	18.9	9.5	2.3	2.7	-0.5	
Utilities	106.6	28.8	27.0	17.0	11.4	2.0	1.5	0.5	
Construction	511.3	100.8	19.7	15.3	5.2	2.8	2.3	0.8	
Manufacturing	2,042.0	518.7	25.4	18.4	7.5	1.4	1.0	0.6	
Trade	1,891.3	269.7	14.3	6.9	7.9	1.2	0.5	0.9	
Transportation and warehousing	583.9	116.5	20.0	13.7	6.8	1.7	0.9	0.9	
Finance, insurance, real estate and leasing	681.5	143.7	21.1	5.9	15.8	2.1	0.6	1.6	
Professional, scientific and technical services	583.9	146.6	25.1	8.3	17.6	1.0	0.6	0.8	
Management, administrative and other support	365.2	51.9	14.2	9.0	5.8	2.3	2.4	0.6	
Educational services	798.8	269.6	33.8	2.3	31.8	1.9	-	1.9	
Health care and social assistance	1,196.0	188.1	15.7	7.3	9.2	1.7	0.6	1.3	
Information, culture and recreation	535.6	101.6	19.0	8.1	11.5	-0.1	-0.1	0.1	
Accommodation and food services	819.8	76.3	9.3	5.3	4.4	1.2	0.9	0.9	
Other services	431.4	67.9	15.7	6.9	9.4	1.9	1.6	1.2	
Public administration	699.5	150.6	21.5	8.7	14.1	1.4	0.6	1.0	
Occupation									
Management	892.2	323.8	36.3	4.3	32.6	1.5	-0.2	1.8	
Business, finance and administrative	2,231.0	379.3	17.0	7.4	10.2	1.1	0.4	0.8	
Natural and applied sciences	804.1	224.2	27.9	12.6	16.5	0.5	0.3	0.6	
Health	600.6	96.6	16.1	9.8	7.3	1.6	1.4	0.5	
Social science, education, government service and religion	798.2	285.1	35.7	3.1	33.2	1.0	0.3	0.9	
Art, culture, recreation and sport	250.5	49.2	19.6	7.4	12.9	2.9	1.3	2.6	
Sales and service	3,054.7	324.9	10.6	5.8	5.3	1.4	0.5	1.0	
Trades, transport and equipment operators	1,611.2	346.4	21.5	19.0	3.1	2.3	2.1	0.4	
Occupations unique to primary industry	244.4	36.5	14.9	11.3	3.2	2.8	1.9	0.7	
Processing, manufacturing and utilities	1,091.4	235.1	21.5	19.9	2.1	1.6	1.4	0.4	

Source: Labour Force Survey, annual averages

Note: Some workers do both paid and unpaid overtime in the same week.

Key labour and income facts

In 2000, the percentage of workers who involuntarily worked part time dropped, while more put in "short" hours because they were going to school.



Source: Labour Force Survey, annual averages

2000	Part-time total '000	Voluntary part-time						Involuntary part-time		
		Own illness	Caring for children	Other personal	School	Preference	Other	Total	Looked for full-time	Did not look for full-time
								%		
Total	2,701.6	2.4	10.7	4.7	30.1	25.1	1.7	25.3	7.4	17.8
Youths (15 - 24)	1,008.2	0.4	1.3	0.8	73.2	5.7	0.4	18.2	6.4	11.8
Men	436.7	0.5	-	0.6	76.3	5.1	0.4	17.0	6.4	10.6
Women	571.5	0.3	2.2	1.0	70.8	6.1	0.4	19.1	6.5	12.6
Adults 25 +	1,693.4	3.6	16.4	7.1	4.4	36.7	2.4	29.5	8.0	21.4
Men	393.0	5.3	1.4	2.8	7.9	39.5	3.7	39.3	13.4	25.9
Women	1,300.3	3.1	20.9	8.3	3.4	35.8	2.0	26.5	6.4	20.1

Source: Labour Force Survey, annual averages

Female employees earned 81 cents for every dollar earned by men in 2000, unchanged from the year before.

	Hourly wage in 2000				Change from 1999			
	Both sexes	Men	Women	Ratio	Both sexes	Men	Women	Ratio
	\$	\$	\$	\$	\$	\$	\$	\$
15 +	16.64	18.36	14.78	0.81	0.50	0.59	0.40	-
15 - 24	9.59	10.11	9.05	0.90	0.30	0.40	0.20	-0.02
25 - 54	18.12	20.02	16.08	0.80	0.58	0.67	0.48	-
55 +	18.14	20.51	15.30	0.75	0.47	0.48	0.48	0.01

Source: Labour Force Survey, annual averages

By industry, employees in utilities made the most. Among all the major occupation groups, managers remained the best paid.

	Hourly wage				Weekly wage			
	1999	2000	Change	%	1999	2000	Change	%
	\$	\$	\$	%	\$	\$	\$	%
Total	16.14	16.64	0.50	3.1	595.62	614.87	19.25	3.2
Industry								
Agriculture	10.46	10.43	-0.03	-0.3	406.39	408.29	1.90	0.5
Forestry, fishing, mining, oil and gas	20.49	20.76	0.27	1.3	876.42	892.17	15.75	1.8
Utilities	23.70	24.40	0.70	3.0	906.08	931.38	25.30	2.8
Construction	17.12	17.78	0.66	3.9	694.72	720.62	25.90	3.7
Manufacturing	16.84	17.54	0.70	4.2	671.37	699.18	27.81	4.1
Trade	12.53	12.81	0.28	2.2	446.53	458.66	12.13	2.7
Transportation and warehousing	16.57	17.33	0.76	4.6	660.93	690.99	30.06	4.5
Finance, insurance, real estate and leasing	17.52	18.18	0.66	3.8	649.42	673.92	24.50	3.8
Professional, scientific and technical services	19.90	20.87	0.97	4.9	764.62	805.63	41.01	5.4
Management, administrative and other support	11.93	12.28	0.35	2.9	429.59	442.98	13.39	3.1
Educational services	21.11	21.54	0.43	2.0	721.20	732.35	11.15	1.5
Health care and social assistance	16.63	17.13	0.50	3.0	549.46	567.03	17.57	3.2
Information, culture and recreation	16.94	16.84	-0.10	-0.6	614.23	608.38	-5.85	-1.0
Accommodation and food services	9.12	9.41	0.29	3.2	284.53	294.52	9.99	3.5
Other services	13.08	14.02	0.94	7.2	477.27	514.26	36.99	7.8
Public administration	20.60	21.30	0.70	3.4	761.48	787.51	26.03	3.4
Occupation								
Management	23.63	24.86	1.23	5.2	952.75	999.46	46.71	4.9
Business, finance and administrative	15.55	15.96	0.41	2.6	558.52	573.56	15.04	2.7
Natural and applied sciences	22.49	23.52	1.03	4.6	869.31	910.63	41.32	4.8
Health	18.65	18.98	0.33	1.8	615.57	626.73	11.16	1.8
Social science, education, government service and religion	22.45	22.76	0.31	1.4	790.18	797.11	6.93	0.9
Art, culture, recreation and sport	16.15	16.76	0.61	3.8	542.48	569.98	27.50	5.1
Sales and service	11.09	11.37	0.28	2.5	364.31	376.27	11.96	3.3
Trades, transport and equipment operators	16.35	16.96	0.61	3.7	663.64	687.69	24.05	3.6
Unique to primary industry	13.15	13.70	0.55	4.2	555.27	582.42	27.15	4.9
Processing, manufacturing and utilities	14.36	14.94	0.58	4.0	570.63	594.57	23.94	4.2

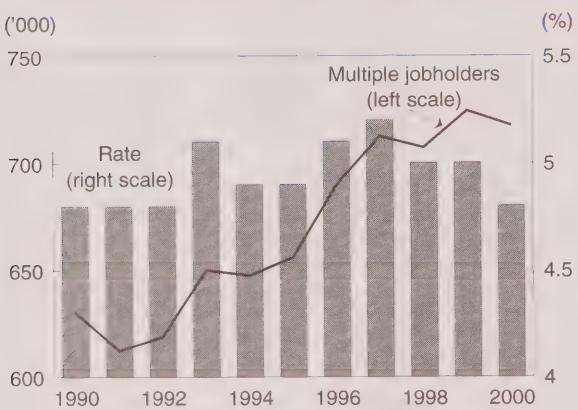
Source: Labour Force Survey, annual averages

The largest drop in the ratio of unionized employees to all employees was in the management of companies, administrative and other support, and transportation and warehousing industries.

	2000		Change, 1999 to 2000		
	Total employees	Employees covered by union contract	Total employees	Employees covered by union contract	%
	'000	%	'000	%	
Total	12,488.3	4,024.7	420.0	142.4	0.1
Public sector	2,792.4	2,064.5	73.9	58.6	-0.8
Private sector	9,695.9	1,960.2	20.2	83.8	0.2
Agriculture	123.6	4.3	3.5	-0.5	-0.3
Forestry, fishing, mining, oil and gas	234.3	70.8	30.2	7.7	1.6
Utilities	116.3	83.2	71.5	0.1	-0.5
Construction	538.3	174.9	32.5	14.4	0.6
Manufacturing	2,187.5	746.6	34.1	32.0	0.4
Trade	2,000.8	295.3	14.8	28.0	0.8
Transportation and warehousing	638.2	277.6	43.5	6.3	-0.9
Finance, insurance, real estate and leasing	736.0	80.7	11.0	9.3	1.2
Professional, scientific and technical services	619.2	33.2	5.4	0.7	-0.3
Management, administrative and other support	385.8	49.5	12.8	5.6	0.9
Educational services	929.4	668.8	72.0	-17.3	-1.6
Health care and social assistance	1,326.8	726.6	54.8	43.4	-
Information, culture and recreation	569.5	157.6	27.7	3.5	-1.0
Accommodation and food services	862.6	73.6	8.5	15.5	1.5
Other services	458.2	45.5	9.9	-1.2	-0.3
Public administration	761.7	536.5	70.4	-4.9	0.5

Source: Labour Force Survey, annual averages

Over the 1990s, the number of "moonlighters" increased; however, their share of total employment remained around 5%.



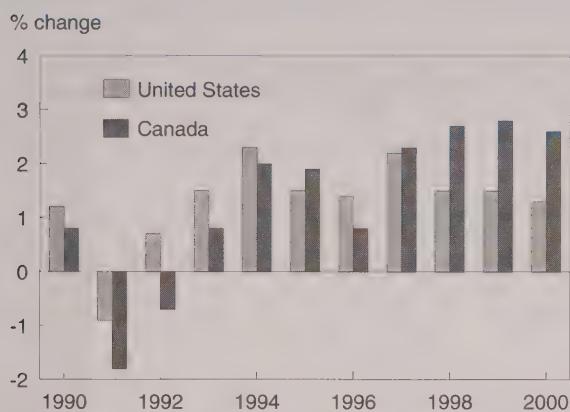
Source: Labour Force Survey, annual averages

About 12% of all employees worked on a temporary basis. For youths, the proportion was twice as high and has increased recently.



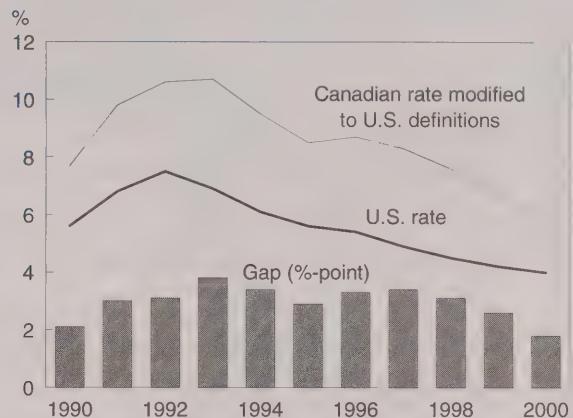
Source: Labour Force Survey, annual averages

For four years in a row, employment grew at a faster pace in Canada than in the United States.



Sources: Labour Force Survey, U.S. Current Population Survey, annual averages

Even after the unemployment rates are harmonized, the gap between the two countries remains.



Sources: Labour Force Survey, U.S. Current Population Survey, annual averages

Note: For more information on modifications to the Canadian unemployment rate, see Labour Force Update (Statistics Canada, Catalogue no. 71-005-XPB) Autumn 1998.

Supplementary measures of unemployment and percentage-point change from 1996 to 2000

	Annual averages			Change	
	1996	1999	2000	1996 to 2000	1999 to 2000
				%	%-point
R1 – Only those unemployed one year (52 weeks) or more	1.6	0.8	0.7	-0.9	-0.1
R2 – Only those unemployed 3 months (12 weeks) or more	4.4	2.8	2.3	-2.1	-0.5
R3 – Made comparable to the U.S. definition	8.7	6.8	5.8	-2.9	-1.0
R4 – Official rate	9.6	7.6	6.8	-2.8	-0.8
R5 – R4 plus discouraged searchers	..	8.0	7.1	..	-0.9
R6 – R4 plus those waiting for recall or replies and long-term future starts	..	8.2	7.5	..	-0.7
R7 – A measure of both unemployment and underemployment (involuntary part-time) expressed in full-time equivalents for recall, replies and long-term future starts	..	10.1	9.1	..	-1.0
R8 – R4 plus discouraged searchers, those waiting for recall or replies, long-term future starts and the underused portion of involuntary part-timers	..	10.9	9.9	..	-1.0

Source: Labour Force Survey

These charts and tables are part of *The labour market: Year-end review*, in this issue. For more information, contact Geoff Bowlby, Labour Statistics Division, at (613) 951-3325 or bowlgeo@statcan.ca.

In the works

Some of the topics in upcoming issues

■ Strike rates among OECD countries

According to recent international data, Canada's strike rates for the 1990s emerge as the worst of the G-7 countries and among the worst in the Organisation for Economic Co-operation and Development (OECD).

■ Repeat users of Employment Insurance

This profile of repeat users of Employment Insurance (EI) looks at their attitudes toward EI and work in general. It also compares their demographic characteristics with those of occasional users and workers in general.

■ Pension coverage and retirement savings

This article documents the evolution of pension coverage of young and prime-aged workers between the mid-1980s and the mid-1990s. It assesses the extent to which such change was induced by shifts in the industrial and occupational structure of employment and by changes in unionization. Workers' own preparation for retirement (that is, their contributions to tax-assisted retirement savings plans) is also considered.

■ Low income intensity among urban and rural families

Low income intensity rose between 1993 and 1997—a period of economic growth—for both urban and rural individuals and families. Underlying these developments were changes in market and government transfer income. This article looks at these movements, as well as the rate of low income.

■ Being in low income for several years

Contrary to popular belief, the population with low income is not static. Considerable movement into and out of low income takes place over time. Using data from the Survey of Labour and Income Dynamics, this article looks at the people most likely to have low income.

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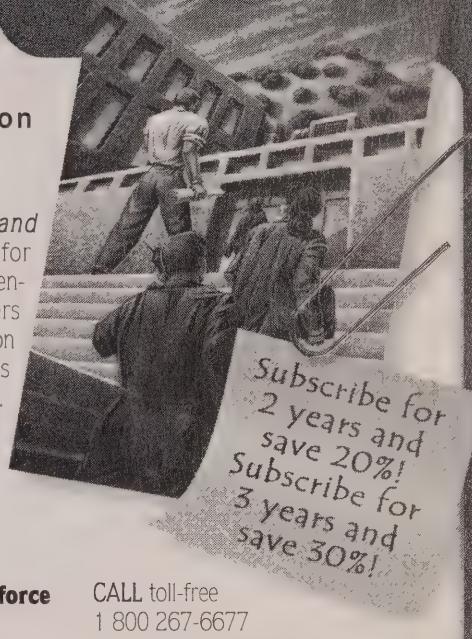
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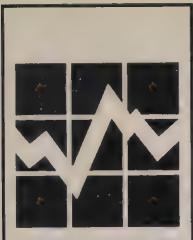
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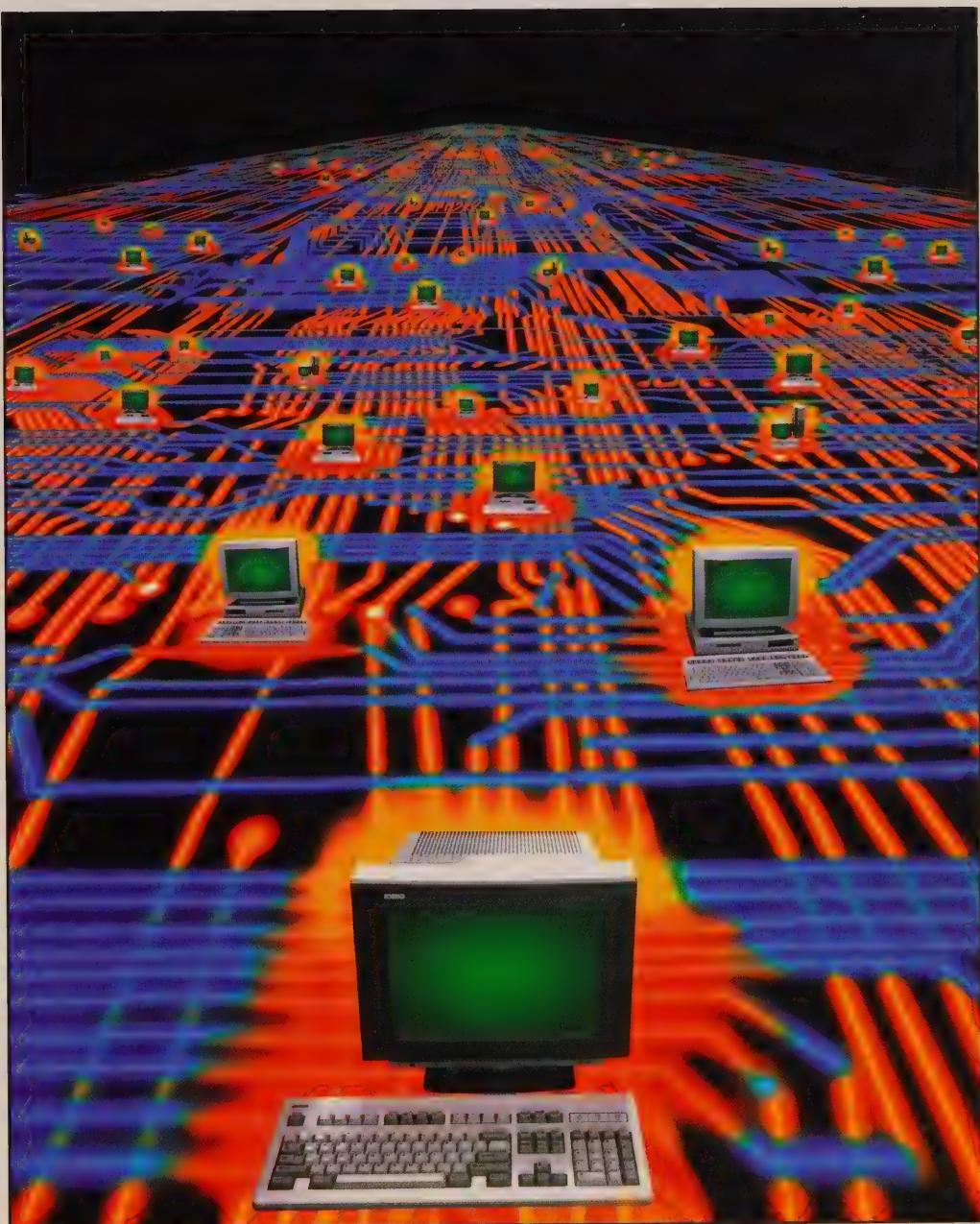
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Family net worth

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■ Articles

9 Working with computers

Katherine Marshall

A look at the extent of computer use by Canadian workers. Which workers are most likely to use a computer at their job? How often? What do they do with it? How did they learn their computing skills?

16 Repeat users of employment insurance

Lori M. Stratychuk

A comparison of the demographic characteristics of EI claimants and employees in general and a look at the attitudes of EI users toward employment and unemployment.

25 Experiencing low income for several years

René Morissette and Xuelin Zhang

While low income is a long-term reality for some people, the population in low income exhibits considerable flux. This study focuses on the people most likely to have had low income for one or more years between 1993 and 1998.

36 Trends in part-time work

Henry Pold

Part-time work comprises two distinct groups: those working very short hours and those closer to full time. This article examines trends in the two groups.

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39 Pension coverage and retirement savings

René Morissette and Marie Drolet

This article uses several household surveys to document the evolution of pension coverage of young and prime-age workers in Canada between the mid-1980s and the mid-1990s. It assesses the extent of change induced by shifts in unionization and in the industrial and occupational structure of employment. Workers' own preparation for retirement (that is, their contributions to tax-assisted retirement savings plans) is also examined. (Adapted from an article in the February 2001 issue of *Canadian Journal of Economics*.)

47 Fact-sheet on gambling

Katherine Marshall

The latest facts and figures on this activity.

Back Issues: Did you miss something?

Don't worry! Back issues of **Perspectives on Labour and Income** are available.

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Spring 2001 2000 in review • Choosing part-time • Aging labour force • Taxes internationally II • Overqualified?

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Forum

From the Managing Editor

Erratum

The article "Part-time by choice" in our spring 2001 issue showed an incorrect formula for shift-share analysis in note 3. The correct version is:

$$m^{t+1} - m^t = \sum_i \left[\frac{(s_i^t + s_i^{t+1})}{2} \cdot (m_i^{t+1} + m_i^t) \right] - \sum_i \left[\frac{(m_i^t + m_i^{t+1})}{2} \cdot (s_i^{t+1} + s_i^t) \right]$$

NAICS

Beginning with January 2001 data, estimates from the Survey of Employment, Payrolls and Hours (SEPH) are based on the North American Industry Classification System (NAICS). The NAICS-based estimates are not comparable to the previously published estimates based on the Standard Industrial Classification (SIC) of 1980. In order to facilitate the transition, NAICS-based historical series have been produced from January 1991 to December 2000. The estimates of employment and average earnings reflect NAICS-based levels derived from the administrative sample and modifications to the industrial coverage and methodology of the survey. In addition, seasonal factors have been revised to improve the historical consistency of seasonally adjusted estimates.

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

A concordance table between NAICS and 1980 SIC codes is available on request. A description of the conversion process and its impact on the data are available in the April 2001 issue of *Employment, Earnings and Hours* (Catalogue no. 72-002-XIB or 72-002-XPB). For more information on NAICS, consult the "NAICS Canada" page on Statistics Canada's Web site (www.statcan.ca), or contact the Labour Statistics Division at labour@statcan.ca.

Fact-sheets

Beginning with this issue, we will be inaugurating a series of "fact-sheets." These brief updates will highlight recent statistics and trends on several popular themes, including gambling, work absences, unionization, and age of retirement. This quarter we feature a fact-sheet on gambling, which shows that net revenue from government-run lotteries, video lottery terminals and casinos rose from \$2.7 billion in 1992 to \$9.0 billion in 2000. Fact-sheets for other topics will be introduced as new data become available.

As always, we welcome your comments and suggestions.

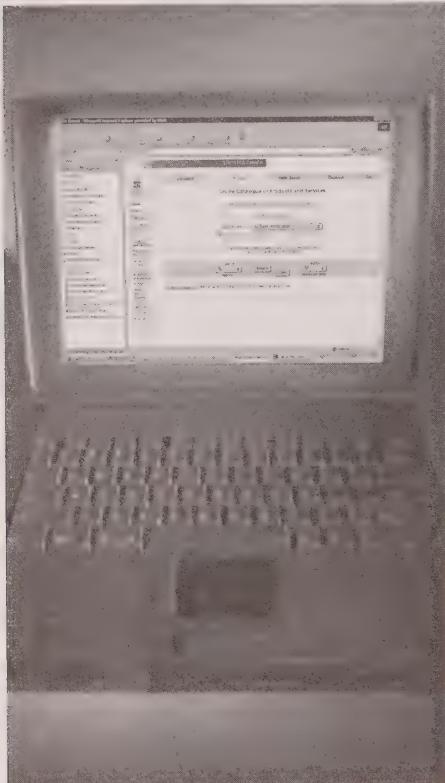
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Highlights

In this issue

■ Working with computers ... p. 9

- Almost 6 in 10 workers used a computer at their job in 2000, with the majority (78%) using one daily. A decade earlier only 3 in 10 workers were using computers.
- Workers were significantly more likely to use a computer at work if they were under 55, had a high level of education or income, were an employee, worked full-time, or worked in a "high skill" or a clerical occupation.
- Almost all workers used their computer for word processing (83%). Four other common purposes were data entry (72%), record keeping (69%), spreadsheets (63%), and the Internet (54%). Only 16% of workers reported using their computer for programming.
- Women were more likely than men to use a computer at work, 60% compared with 54%. However, except for word processing, women were less likely to have performed all types of computer-related work.
- The most common methods used by workers to acquire their computer skills were informal: trial and error (97%), help from co-workers (76%) and help from friends or family (76%).
- Public employees used more methods to learn their computer skills (5.1) than private-sector employees (4.7) or the self-employed (4.0). Employer-sponsored classroom training was particularly common for public employees (68%) compared with those in the private sector (53%) or the self-employed (36%).

■ Repeat users of employment insurance ... p. 16

- While men accounted for 52% of employees in 1997, they made 59% of regular EI claims (that is, excluding claims for maternity, paternal, sickness and other special benefits) in 1996.
- Persons 35 and over had a disproportionate share of multiple EI claims (3 to 5 between 1992 and 1996).
- Less than half (49%) of persistent EI users had completed high school, compared with more than three-quarters (78%) of all employees.
- The Atlantic provinces accounted for 16% of regular benefit claims, more than twice their 7% share of employees. Quebec also had a disproportionate share of EI claims (34%) relative to paid employment (24%).
- Most regular EI claimants were satisfied with their employment and income situations. Moreover, satisfaction with each increased with the number of claims, possibly because frequent users were more accustomed to changes in their status.
- A strong majority of EI claimants would have been willing to change employers or the kind of work they did, but not their province of residence.
- Most claimants accepted EI use as a "fact of life".

■ Experiencing low income for several years

... p. 25

- Between 1993 and 1998, some 13% of all individuals lived in families with low income. For these persons, family income was 31% to 38% below the low income cutoff.
- About 8% of Canadians lived in families experiencing low income for four years or more between 1993 and 1998. Only 3% experienced low income for all six years and some 76% lived in families with no experience of low income during the period.
- Some 29% of children under six experienced low income for at least one year; about 12% lived in families that had low income for four years or more. Conversely, only 6% of people 65 and over had low income for four years or more between 1993 and 1998.
- Between 1993 and 1998, fully 38% of people living in families headed by a lone parent experienced low income for four years or more, compared with 23% of unattached individuals.
- Of all those who started a spell of low income in one year, 50% to 60% no longer had low income the following year. On the other hand, some spells of low income last a long time: of all Canadians falling into low income in 1994, some 30% remained for three years or more.

■ Trends in part-time work

... p. 36

- Part-time work has increasingly divided into two camps: short-hour part-time (less than 15 hours per week) and long-hour part-time (15 to 29 hours).
- While long-hour part-time work increased every year from 1976 to 2000, more than doubling over the period, short-hour part-time grew more slowly and then began to decline after 1996.
- As a result, between 1976 and 2000, average weekly hours for part-time workers increased from 15.5 to 16.9.

■ Pension coverage and retirement savings

... p. 39

- Between 1984 and 1998, registered pension plan (RPP) coverage declined for men aged 25 to 54 and for women 25 to 34, while for women 35 to 54, the percentage covered by a pension plan increased from 46% in 1984 to 51% in 1998.
- At least two factors may explain the drop in men's coverage. First the unionization rate fell during the period: from 39% to 26% for young men (25 to 34) and from 48% to 41% for prime-age (35 to 54) men. Pension coverage rates are much higher in unionized jobs than they are in non-unionized jobs. Second, employment has shifted away from high-coverage industries to low-coverage industries.
- Between 1986 and 1997, average contributions to RPPs fell substantially among young and prime-age men, dropped slightly among young women, and rose among prime-age women. However, registered retirement savings plan (RRSP) contributions grew dramatically (by at least 70%) for each of the four age-sex groups.
- Over the same period, contributions to RPPs and RRSPs made by workers in the top income quintile were 9 to 46 times greater than those made by workers in the bottom quintile. Contributions by the latter never exceeded \$200 per year for young men and women or \$630 per year for prime-age men and women.

■ What's new?

... p. 53

■ Just released

CANSIM II

Annual Demographic Statistics, 2000

Survey of Approaches to Educational Planning

Workplace and Employee Survey

Labour Market Outcomes of Arts and Culture Graduates

Literacy, Numeracy and Labour Market Outcomes in Canada

Training as a Human Resource Strategy: The Response to Staff Shortages and Technological Change

Job Tenure, Worker Mobility and the Youth Labour Market During The 1990s

Farm family income

Measuring Economic Well-Being of Rural Canadians Using Income Indicators

Employment Structure in Rural and Small Town Canada: An Overview

The Assets and Debts of Canadians: An Overview of the Results of the Survey of Financial Security

Composition of Assets and Debts Held by All Family Units, Canada, Regions and Provinces, 1999

Family Units and Net Worth by Net Worth Groups, Canada, Regions and Provinces, 1999

Net Worth of Economic Families, Unattached Individuals and All Family Units by Selected Family Characteristics, Canada, Regions and Provinces, 1999

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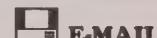


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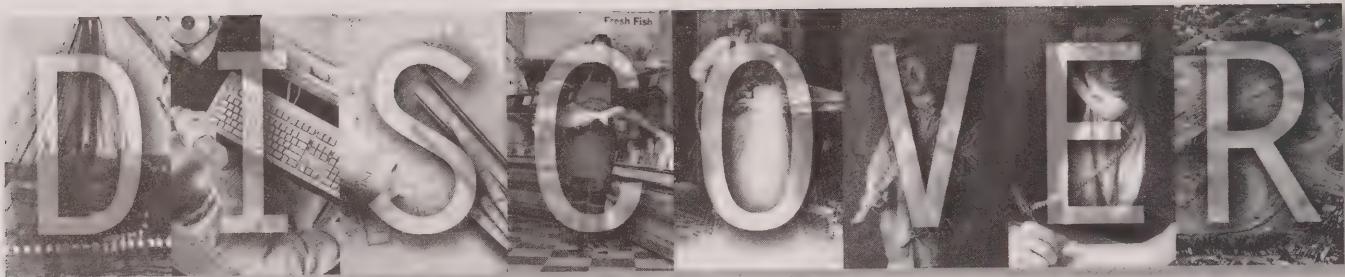
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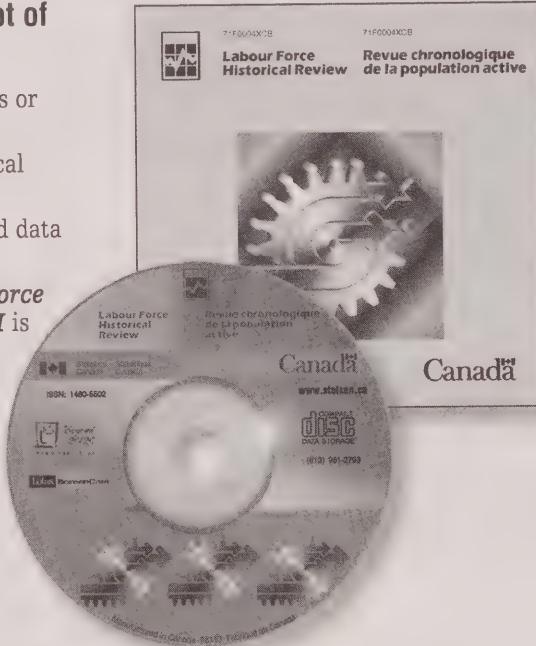
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Working with computers

Katherine Marshall

Long gone, but still remembered by many, are typewriters, typing pools, carbon copies, adding machines and physical mail boxes. The ubiquitous personal computer has changed all this and revolutionized the workplace. Furthermore, most workers today go well beyond using their computer as a mere typewriter or calculator.

As intriguing as this computer-use revolution may be, embracing information and communication technology (ICT) is viewed as an essential ingredient for both businesses and individuals to remain competitive in today's knowledge-based economy. "[A]ccess to and development of information, communication and e-commerce resources are increasingly viewed as crucial for economic and social development." (OECD, 2001). It is argued that access to and use of ICTs can increase productivity and efficiency, enhance knowledge and skill levels, and improve the quality of work life (ILO, 2000).

Concerns have been raised, however, over the uneven use of ICTs—the "digital divide"—between and within countries. For example, only 6% of the world's population has ever logged onto the Internet, and close to 90% of them are from industrialized countries (ILO, 2000). Digital divides have been documented within industrialized countries as well—among individuals, households, businesses and geographic regions.

This paper examines the extent of computer use by Canadian workers (see *Data source and definitions*): which workers are most likely to use a computer at their job, how often they use it, what they use it for, and how they learned their computing skills.

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Computer use soars

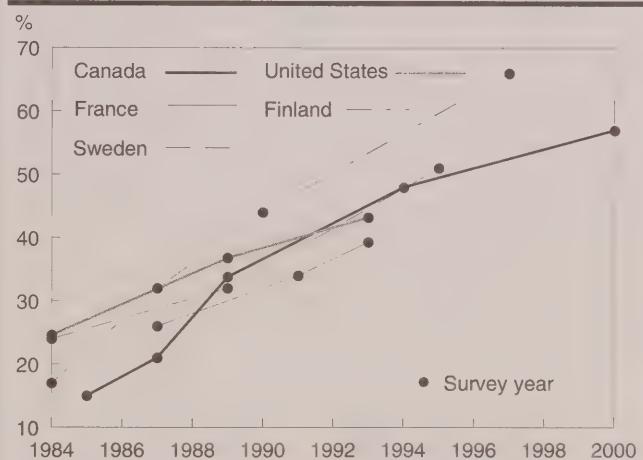
In a mere decade, the proportion of workers using a computer at their main job has risen from 33% in 1989 to 57% in 2000—with almost 80% of users now working at their computer every day (Chart A, Table 1). The same trend can also be seen in other industrialized countries (see *International comparisons*).

As found in past studies, a higher proportion of employed women in 2000 used a computer at work than men, 60% compared with 54%. In 1989, the comparable figures were 38% and 32%.

International comparisons

As was the case in Canada, as little as 15 years ago (mid-1980s) less than one-third of the employed in other industrialized countries were using a computer at their job (OECD, 1998). Since then, growth in the use of computers at work has been steady and constant—with still no indication of a levelling in the trend.

Computer use at work rising in industrialized countries.



Sources: General Social Survey; Organisation for Economic Co-operation and Development

Note: Differing definitions and methodologies limit comparability.

Data source and definitions

The main theme for the 2000 **General Social Survey (GSS)** was access to and use of information and communication technology, specifically computers and the Internet. From January to December, approximately 25,000 respondents 15 or older were asked details of their personal use of computers and the Internet. Topics covered included the use of computer technology in the workplace and the development of computer skills. Both the 1989 and 1994 GSS asked a limited number of questions on technology use. For more information on the 2000 cycle of the GSS, contact Kathryn Stevenson at (613) 951-4178.

Employed: persons who reported spending any time working at a job or business in the month previous to the interview.

Uses a computer at work: employed persons who used a computer at their main job during the preceding 12 months.

Income: total annual personal income, before deductions, from all sources. It comprises earnings from paid or self-employment, government transfer payments, and income from pension plans or other sources.

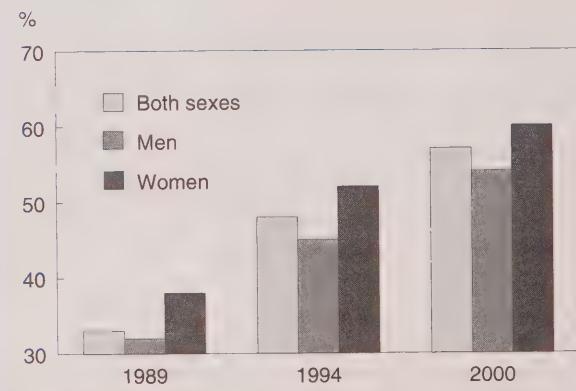
Public/private sector employment: a standard Labour Force Survey (LFS) variable, created after data collection based on National Accounts definitions. The public sector consists of employees in public administration at all levels of government, crown corporations, liquor control boards and other government institutions such as schools, hospitals and public libraries. The private sector is all remaining employees plus self-employed owners of businesses. All 4-digit industries from the LFS with 50% or more public sector employees were deemed to be public sector industries for the GSS, and all remaining industries, private sector. Using this proxy method, 17% of the employed in the GSS in 2000 were public sector, compared with 19% from the LFS.

Education and income key factors

Professional occupations¹ often require a highly developed set of skills that, as the data confirm, often includes using a computer. Those with such jobs had the highest rate for computer use at work (86%) (Table 1). Most managerial jobs also involved computer use (78%). Although clerical jobs may not be considered "high skill", they had the second highest rate of computer use (84%). However, as shown later, persons in this line of work use a computer quite differently than do professionals or managers. Since higher level jobs usually require higher levels of education and can command higher earnings, it is not surprising to see these characteristics linked with computer use too. For example, while only 41% of workers with a high school education sat, at least occasionally, at a keyboard for their job, fully 85% of those with a university degree did so. And whereas only 36% of workers with an annual income less than \$20,000 used a computer at work, 80% of those with \$60,000 or more did so.

Younger (15 to 24) and older (55 and over) workers were both less likely to use a computer at work than were core-age (25 to 54) workers, about 40% compared with 62%. Also, full-time workers were more likely than part-time workers to use a computer at work (60% versus 39%), and employees more than

Chart A : More than half the employed now use a computer at work.



Source: General Social Survey

the self-employed (57% versus 52%). However, the self-employed were more likely to use the Internet for their job than employees (69% versus 52%), confirming that, increasingly, the Internet is being used by the self-employed as a tool to conduct business (data not shown).

Table 1: Computer use and frequency of use among the employed, by selected characteristics

	Uses a computer '000	Uses daily* %	Odds ratios†	
			Total	Daily*
Total	8,338	6,413		
Both sexes	57	78		
Men	54	79	1.0	1.0
Women	60	77	1.1**	0.8**
Age				
15 to 24	41	67	1.0	1.0
25 to 54	62	80	0.9**	1.1**
55 and over	44	78	0.4	1.1**
Education				
High school or less	41	74	1.0	1.0
Postsecondary certificate or diploma	62	79	1.7	1.2**
University degree	85	81	3.0	1.0**
Residence**				
Urban	59	79	1.0	1.0
Rural	48	72	0.8**	0.8**
Income (individual)				
Less than \$20,000	36	63	1.0	1.0
\$20,000 to 39,999	58	77	1.9	1.3**
\$40,000 to 59,999	71	80	3.7	1.6
\$60,000 and over	80	86	6.2	2.8
Class of worker				
Employee	57	80	1.0	1.0
Self-employed	52	65	0.8**	0.4
Work status				
Full-time	60	81	1.0	1.0
Part-time	39	52	0.6	0.3
Occupation				
Management	78	85	1.0	1.0
Professional	86	80	1.4**	0.7**
Technical	71	75	0.7**	0.6**
Clerical	84	87	2.1	1.8
Sales and service	39	70	0.3	0.5
Trades, transport and equipment operators	32	62	0.1	0.2
Primary	24	43	0.1	0.2
Processing, manufacturing and utilities	29	79	0.1	0.5**

Source: General Social Survey, 2000

* Of all computer users.

** Excludes Prince Edward Island; urban indicates population concentration of 1,000 or more and a population density of 400 or more per square kilometre.

† Odds ratios are generated from a logistic regression. They indicate whether certain levels of an explanatory variable, compared with the reference category (ratio = 1.0), increase or decrease the odds of a certain event occurring while controlling for all other explanatory variables in the model. In this case, separate models were used to look at the chances (odds) of using a computer at work, and using a computer at work daily.

†† Difference with reference category not significant at the <.001 level.

Among those with access, 8 in 10 use computer daily

Of the 8.3 million workers who used a computer at work, 78% (6.4 million) did so daily. Compared with computer use overall, there was much less discrepancy among workers who used a computer daily. In other words, if a computer was used at work, no matter the occupation or the workplace, the use was likely intense—with a few exceptions. Workers falling at least 10 percentage points below the average in terms of daily computer use comprised those 15 to 24 (67%), the self-employed (65%), those with an income of less than \$20,000 (63%), those in trades and transport and equipment operating (62%), part-time workers (52%) and those in primary occupations (43%).

Most differences significant

Logistic regression² was used to examine the relationship between computer use, intensity of use, and the above explanatory variables simultaneously. With only a few exceptions, all variables had a significant influence on the likelihood of using a computer at work (Table 1). The findings for age and residence were revealing. Even though younger workers were less likely to use a computer at work than core-age workers (41% compared with 62%), the difference was not significant when all other relevant variables, such as education and work status, were taken into account.

Many younger workers have not yet completed their schooling and perhaps work part time. Once this was taken into account, their

computer use was not significantly different from that of core-age workers. Similarly, controlling for occupation (which takes into account the higher proportion of jobs in primary occupations in rural areas) and other variables, urban and rural dwellers were not significantly different in their computer use. As expected, education and income were strong predictors of computer use at work. For example, workers with a university degree were 3.0 times more likely to use a computer at work than those with a high school education or less.

On the other hand, only a few significant differences were evident in the *daily* use of computers. For example, the self-employed were significantly less likely than employees to use a computer daily, as were part-time workers compared with full-time. Also, higher income significantly increased the chances of working with a computer every day.

Proficiency notwithstanding—almost everyone has learned to type

Of those who used a computer at work, the vast majority had composed text with a word processing package (83%), and most reported using their computer for four other purposes as well: data entry (72%), record keeping (69%), spreadsheets (63%), and the Internet (54%) (Table 2).³ Of a possible eight work-related computer tasks, workers did an average of 4.5. Less than half performed more technical tasks such as graphics generation (48%), data analysis (46%) and programming (16%).

Occupation is a key determining factor, not only for overall computer use at work (as shown above), but also for the type and number of computer applications used. For example, almost all professionals in natural and applied science used a computer at work (96%), and for the most purposes (6.3). This was also

Table 2: Computer use, by occupation and age

Employment	Use com- puter	Word proces- sing	Tasks performed*							Pro- gram- ming	Average tasks
			Data entry	Record keeping	Spread- sheets	Internet	Graph- ics analysis	Data analysis			
All occupations	100	57	83	72	69	63	54	48	46	16	4.5
Management	9	78	87	79	80	74	69	55	60	16	5.2
Professional	17	86	93	75	73	71	73	58	56	25	5.2
Business and finance	3	95	94	85	81	87	71	51	76	14	5.6
Natural and applied science	4	96	96	79	77	89	87	73	73	55	6.3
Teaching	4	85	96	71	70	61	69	61	43	14	4.9
Technical	7	71	85	69	68	62	63	58	42	16	4.6
Clerical	15	84	86	81	73	67	48	41	45	10	4.5
Sales and service	26	39	77	65	58	51	38	42	34	10	3.8
Retail trade	3	46	72	58	44	50	22	44	24	13	3.3
Wholesale trade	4	83	82	79	75	63	63	48	53	8	4.7
Trades, transport and equipment operators	13	32	59	55	58	49	30	37	33	13	3.3
Primary Processing, manufacturing and utilities	4	24	62	70	72	61	50	41	47	10	4.1
Age	100	57	83	72	69	63	54	48	46	15	4.5
15 to 24	16	41	89	72	54	67	43	56	41	23	4.5
25 to 54	74	62	83	73	71	64	56	48	48	15	4.6
55 and over	10	44	76	69	68	51	53	34	39	11	4.0

Source: General Social Survey, 2000

* In the past 12 months, except for the Internet, which refers to the past month.

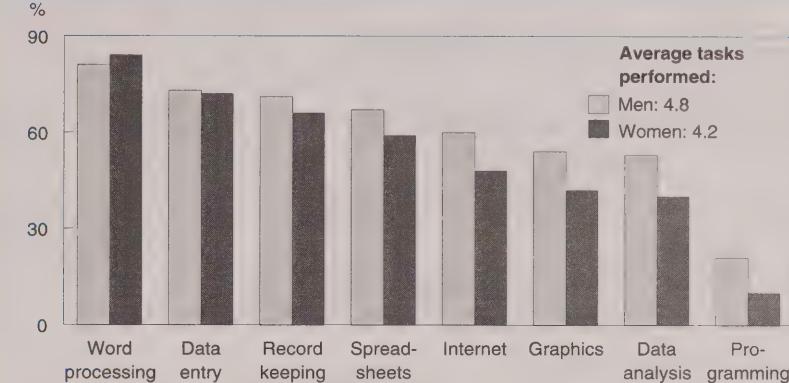
the only occupational group in which the majority did some computer programming at work (55%, compared with 16% overall). This group also had the highest average Internet use (87%, compared with 54% overall). Many in this field are considered knowledge workers, who generate and transmit ideas electronically and use the Internet to have "...access any time to unlimited amounts of the 'raw material' of knowledge creation" (ILO, 2000). At the other end of the spectrum are workers with jobs in trades and transport and equipment operation, primary occupations, or processing, manufacturing and utilities. Less than one-third of them used a computer at work, and those who did, used it for fewer purposes (3.3 to 4.1).

Computer users aged 15 to 24 used their machines for about the same number of purposes (4.5) as those 25 to 54 (4.6), but for more than workers 55 and over (4.0). Furthermore, compared with core-age workers, higher proportions of younger workers did word processing (89% versus 83%), programming (23% versus 15%), graphics generation (56% versus 48%), and spreadsheets (67% versus 64%). The high rate of computer programming among younger workers is consistent with the lower-than-average age profile of workers in computer programming and related occupations (Gower, 1998).

Computer tasks vary by sex

Although women were more likely than men to use a computer at work (60% versus 54%), they performed fewer tasks with their computer, 4.2 compared with 4.8 (Chart B). Furthermore, except for

Chart B: Except for word processing, men are more likely to perform all types of computer work.



Source: General Social Survey, 2000

word processing, women were less likely than men to have done all computer-related types of work. The difference in computer work was particularly high for the Internet (48% for women versus 60% for men), graphics generation (42% versus 54%), data analysis (40% versus 53%), and programming (10% versus 21%). These differences can be explained largely by the varying occupations of women and men. For example, more men were employed in management (66%) and professional (53%) occupations—fields with higher-than-average use for all computer tasks. On the other hand, more women were employed in clerical (75%) and sales and service (52%) occupations—positions with below average rates for many of the different applications.

Multiple methods used to acquire skills

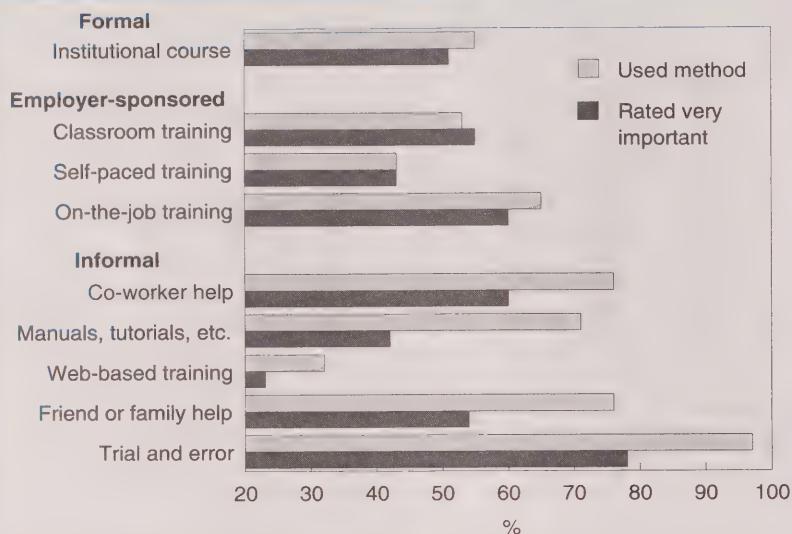
Although more than half of computer users had taken at least one computer-related course from an institution, most workers used less

formal methods to learn their computer skills (Chart C). Not surprisingly, almost all computer users (97%) enhanced their skills through trial and error, and 78% rated it a very important method. Three-quarters of those who used a computer at work reported learning from co-workers and friends or family as well, and more than half also rated these as very important. Most also reported learning from manuals or tutorials (71%), but these were rated as very important by only 42%. The most common employer-related learning method was on-the-job training (65%), which, after trial and error, had the second highest rating (along with co-worker assistance) as a very important method (60%).

Classroom training prominent in public sector

In acquiring computing skills, public-sector employees⁴ were considerably more likely than those in the private sector to use all three types of employer-related training methods (classroom, self-paced

Chart C: On-the-job training is the most common employer-sponsored computer-skills learning method.



Source: General Social Survey, 2000

and on-the-job). On-the-job training was the most common method for both public (74%) and private (68%) employees, and it was rated as very important by 6 in 10 that

had such training. The largest difference occurred with classroom training—68% of public employees had it, compared with only 53% of private employees (Table 3).

Just over one-third of the self-employed experienced each of the three forms of employer-sponsored training, either in a previous paid job, or possibly with their own company if it had employees and offered such training. The low employer-related training rates are reflected in the overall number of computer learning methods used by the self-employed (4.0 of a possible 8). The number of computer training methods used by both public and private employees was higher, 5.1 and 4.7, respectively. Compared with employees, the self-employed were most likely to rely on friends or family (81%) and manuals or tutorials (76%) to learn to use their computer, with the former perceived as very important by the most people (60%).

Summary

Information and communication technology in the workplace has risen dramatically, with almost 6 in 10 workers in 2000 using a computer for their job, double the 3 in 10 just a decade earlier. Furthermore, almost 80% of these workers used a computer every day. Most used their machine for at least four purposes—with word processing, data entry, record keeping and spreadsheets being the most common. Except for word processing, men were more likely than women to do all types of computer-related work.

However, access to and use of ICTs was not evenly dispersed across the workplace. Workers were significantly more likely to use a computer at work if they were under 55, had high levels of education or income, were an employee, worked full-time, or were in a high skill or a clerical occupation.

Table 3: Methods used to learn computer skills*

	Used method			Rated very important		
	Employees		Self-employed	Employees		Self-employed
	Public	Private		Public	Private	
%						
Formal						
Institutional course	54	57	52	50	52	47
Employer-sponsored						
Classroom training	68	53	36	60	55	45
Self-paced training	49	44	33	44	44	36
On-the-job training	74	68	41	61	61	49
Informal						
Co-worker help	84	78	57	63	59	55
Manuals, tutorials, etc.	73	70	76	40	42	47
Friend or family help	77	74	81	57	51	60
Web-based training	30	33	33	21	23	22
Average methods used	5.1	4.7	4.0			

Source: General Social Survey, 2000

* Refers to training ever taken. Excludes trial and error, which almost everyone has tried.

Society is in the midst of an emerging digital era. Without doubt, there will be further technological change with implications for the workplace. Hence, for most workers (re)training, be it formal, informal or employer-sponsored, will be an ongoing part of their work life.

Perspectives

Notes

- 1 Includes financial analysts, accountants, scientists, engineers, architects, computer programmers, physicians, dentists, lawyers, teachers, librarians and journalists.
- 2 This technique isolates each variable and reveals its relationship with the probability of using a computer at work while holding all other variables constant. Thus, it is possible to determine, for example, whether sex still influences computer use when occupation and other job and personal characteristics are held constant.
- 3 The GSS asked about several types of computing activities with the following question: "In the past 12 months, have you done any of the following on a computer....?" Except for a specific question about Internet activity at work,

the survey did not ask respondents whether they did the other activities at home or at work. However, given that the study population for this section was employed people who used computers at work, it can be assumed that the reported computer activities were most likely done at work.

4 Those employed in public administration, government institutions such as schools, hospitals and public libraries, crown corporations, and liquor control boards (See *Data source and definitions*).

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Repeat users of employment insurance

Lori M. Stratychuk

The Employment Insurance (EI) program¹ provides various income support benefits to qualifying individuals. In most cases, EI acts like insurance, providing income for those who have unexpectedly become unemployed. Other benefits are also available for maternity, paternity and sickness. In addition, EI provides "active labour market programs" for such things as training, job creation, job sharing, and wage subsidies.

EI covers virtually all employees across the country, most of whom never need to draw upon the program. Among those who do draw benefits, most do so only infrequently. However, a number of individuals, year after year, work for a portion of the year and then collect EI benefits for the rest of the year. This study looks at the characteristics of these individuals (see *Data sources and definitions*).

The first part of this study compares the demographic characteristics of repeat users of EI with those of employees overall. The second part examines the attitudes of repeat users toward employment and unemployment in general.

Characteristics of repeat users of EI

Who are the repeat users of the EI program? Do they display patterns by sex, age, education, region of residence, or occupation? This section addresses these issues.

Men use EI more than women, and with greater intensity

Among occasional EI claimants, men and women differ only slightly in their use of the program—men make up 52% of employees and 55% of occasional

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EI users; women, 48% and 45% (Table 1). Overall however, men do comprise a disproportionate share of regular EI claimants (59%). The difference arises from their unbalanced share among repeat users (65%) and persistent users (62%).

Those over 35 more likely to be repeat users of EI

The age distribution of EI claimants is clearly different than that of employees overall (Table 1). Those 15 to 19 constitute 6% of all employees, yet they represent less than half a percent of all claimants. This is unsurprising, since young workers may not have enough labour market experience to make even a single EI claim. On the other hand, all age groups from 35 onward have a disproportionate share of repeat users and persistent users.

Table 1: EI use, 1992 to 1996

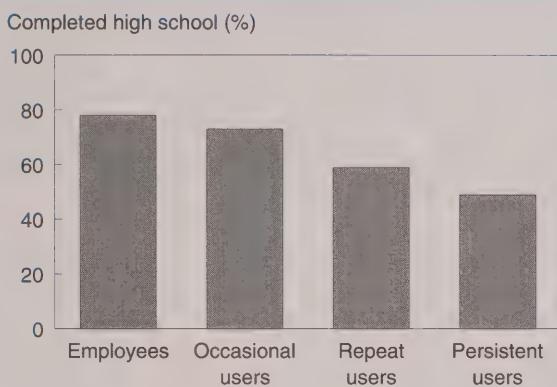
	Employees in 1997	Over- all	Frequency		
			Occa- sional (1 - 2)	Repeat (3 - 4)	Persis- tent (5)
Sex					
Men	52	59	55	65	62
Women	48	41	45	35	38
Age					
15 to 19	6	-	1	-	-
20 to 24	11	9	15	5	1
25 to 34	27	30	32	32	20
35 to 44	28	29	26	31	34
45 to 54	20	20	17	21	29
55 to 59	5	6	4	6	9
60 plus	3	5	4	5	7

Sources: Labour Force Survey; Survey of Repeat Use of Employment Insurance

Repeat users less likely to have completed high school

An inverse relationship between claims initiated over the five-year period and high school completion is clear (Chart A). Only 49% of persistent EI users had completed high school. The rate increased modestly (to 59%) for repeat EI users. The rate jumped to 73% for occasional users of the EI program, which was still lower than the rate for all employees (78%).

Chart A: High-frequency claimants were less likely to have completed high school.



Sources: Labour Force Survey, 1997; Survey of Repeat Use of Employment Insurance

The inverse relationship was not just because of the age distribution of EI claimants—that is, high frequency claimants tended to be older, and older individuals were less likely to have completed high school. The high school completion rate for each age group and EI claim frequency displayed the same pattern (Table 2). The high school completion rate for all employees was always higher than for occasional EI users, which was higher than for repeat EI users, which was higher than for persistent EI users.

Atlantic Canada and Quebec benefit most

The Atlantic provinces had proportionately more EI claimants than employees (Table 3). Atlantic Canada accounted for 16% of all regular benefit claims initiated, which was more than twice their share of employees (7%). Their share of repeat users was *more than double* their portion of employees and persistent

Table 2: Proportion of EI claimants with high school completion

	EI use, 1992 to 1996				
	Employees in 1997	Overall	Occa- sional	Repeat	Persis- tent
%					
All ages	78	64	73	59	49
15 to 19	42	38	38	48	--
20 to 24	87	76	79	65	41
25 to 34	87	76	82	70	65
35 to 44	81	65	72	62	54
45 to 54	75	55	63	52	45
55 to 59	59	38	54	31	26
60 plus	55	40	54	34	24

Sources: Labour Force Survey; Survey of Repeat Use of Employment Insurance

users were almost *quadruple*. Quebec also had a disproportionate share of EI claims initiated (34%) relative to its share of paid employment (24%).

The disproportionately high EI claim rates in the Atlantic provinces and Quebec, relative to their share of employees, are not unexpected, given their high unemployment rates. However, the connection between high unemployment rates and high EI claim rates exists because of the regional² component of the EI program. As the unemployment rate in an EI region increases, the hours required to qualify for EI diminishes and the maximum duration of benefits increases.

Seasonal occupations linked to claim rates...

Given the seasonal nature of certain occupations, individuals in such jobs are more likely to experience a layoff and then apply for EI benefits.³ The extent to which persons in a particular occupation over-use the EI program can be measured by the ratio of their share of repeat claims to their share of paid employment. If the ratio is one, individuals in the occupation use EI regular benefits no more or less than expected. The more this ratio exceeds one, the more they rely on the EI program.

Employees in fishing and forestry occupations were the most frequent EI users.⁴ Their share of regular claims was almost ten times their share of paid employment (Table 4). The construction trades also

Data sources and definitions

The data come from the 1997 Survey on the Repeat Use of Employment Insurance (EI), a joint project between the Social Research and Demonstration Corporation (SRDC) and Statistics Canada, funded by Human Resources Development Canada (HRDC). The sample consisted of individuals who had had a regular EI claim during the 1996 calendar year. (Regular claims are distinct from maternity, paternal, sickness, job training and fishing benefit claims.)

Survey population

Type of claimant	Claims in 1992-1996	'000	%
Occasional	1 or 2	802	50.7
Repeat	3 or 4	477	30.2
Persistent	5	301	19.1

The main objective was to develop a profile of repeat EI users. The survey collected detailed information on the 1997 labour market activities of respondents. In addition, it asked about job search activities, household composition and income, residence, demographics, education and training, and attitude toward employment and unemployment in general. The survey was developed as a result of the Earnings Supplement Project.

Data from the Labour Force Survey provide a benchmark for demographic characteristics. Employees serve as the comparison group, since they are the ones at risk of having an EI claim in the future.

The Earnings Supplement Project: As the average length of each unemployment spell increased in the early 1990s, and EI claims outpaced resources, new and innovative ways for promoting employment and reducing unemployment duration were considered. The Earnings Supplement was one of five new employment measures considered by HRDC. Its aim was to test whether a financial incentive would encourage more rapid re-employment of displaced workers (those who had been employed for at least three consecutive years before being laid off), who often bear large adjustment costs. A second component was designed to encourage repeat users of EI to take off-season or year-round jobs. In both cases, unemployed workers who accepted employment at a lower wage than previously, within a specified period, were offered an earnings supplement.

The Earnings Supplement Project was undertaken to determine the effectiveness of this supplement in helping these two groups of EI claimants become re-employed more quickly. HRDC contracted the SRDC, a non-profit organization, to manage the overall project. Statistics Canada was contracted to assist in data collection activities as well as to conduct a follow-up survey. While the data were originally meant to help researchers evaluate the effectiveness of the earnings supplement, such a disproportionately small number of repeat users agreed to participate that the follow-up survey was not administered (Tattrie, 1999). Instead, the Survey on the Repeat Use of Employment Insurance was developed specifically for this group.

Table 3: EI claimants by region

Employees in 1997	EI use, 1992 to 1996				Unem- ployment rate, 1997	
	Overall	Occa- sional	Repeat	Persistent		
%						
Atlantic	7	16	10	18	27	13.9
Quebec	24	34	29	36	41	11.4
Ontario	38	27	33	23	17	8.4
Prairies	17	12	14	10	8	6.0
British Columbia	14	12	14	12	7	8.4

Sources: Labour Force Survey; Survey of Repeat Use of Employment Insurance

had a disproportionate share of EI claims, with regular EI claims more than triple their share of paid employment. All the other trades (mining, processing, machining, transportation and materials handling) also had a relatively large share of claims relative to employment. Teachers also had a disproportionate share of EI claims. Although their work, as well as the education required, is quite different from all other occupations with an excessive share of regular EI claims, the seasonal nature of their jobs is quite similar.

**Table 4: Claim frequency and duration of EI benefits,
1992 to 1996**

	(A) Employees	(B) EI users	B/A	Claim frequency		Weeks of benefits	
				Mean	Median	Mean	Median
%							
All occupations	100.0	100.0	--	2.8	3	60.8	70
Managerial, administrative	14.6	5.5	0.4	2.2	3	48.8	56
Natural science	4.4	2.4	0.5	2.4	3	54.0	62
Social science	2.2	1.5	0.7	2.2	3	46.2	39
Religion	0.3	--	--	--	--	--	--
Teaching	5.3	6.7	1.3	3.0	4	45.5	43
Medicine	5.7	2.3	0.4	2.3	3	52.1	54
Artistic	1.7	2.0	1.2	2.6	3	57.6	67
Clerical	16.2	11.1	0.7	2.4	3	52.9	54
Sales	8.7	5.5	0.6	2.0	2	46.8	54
Service	13.1	11.5	0.9	2.7	3	62.3	70
Farming	1.3	4.1	3.2	3.4	4	76.4	90
Fishing	0.1	0.8	8.0	4.1	5	131.8	148
Forestry	0.3	2.6	8.7	3.8	4	95.2	104
Mining	0.5	0.9	1.8	2.9	3	60.7	60
Processing	3.0	4.5	1.5	3.1	4	79.0	94
Machining	1.9	2.8	1.5	2.8	3	61.3	75
Fabricating	8.8	9.1	1.0	2.5	3	50.3	58
Construction	4.2	15.1	3.6	3.5	4	79.3	86
Transportation	3.7	7.1	1.9	3.1	4	62.9	65
Materials handling	2.8	3.3	1.2	2.6	3	59.3	72
Other crafts	1.2	1.0	0.8	2.4	3	52.4	63

Sources: Labour Force Survey, 1997; Survey of Repeat Use of Employment Insurance; Employment Insurance administrative data

Note: Shading indicates occupations with a greater proportion of EI users than employees (B/A > 1).

Mean and median

The mean is the sum of the values of some characteristic divided by the number of individuals with the characteristic. The median represents the “middle” value, where half of the individuals fall below and half above. Using both statistics provides an improved picture of the distribution of the data. In particular, if the median is larger than the mean, then the majority of individuals are actually above the average value.

more than the average number of claims and more than the average number of weeks of benefits.

Attitudes of repeat EI users

What are the attitudes and opinions of EI claimants? What is the link between the opinions of EI claimants and their claim history? This part of the article looks at these issues.

Most claimants satisfied with their employment...

The vast majority of regular EI claimants were satisfied with their employment situation in 1997 (Chart B).⁵ Moreover, satisfaction with the previous year's employment increased with the number of claims. More repeat users than occasional users were satisfied with their employment situation (65% versus 58%), and more persistent users than repeat users were satisfied with their employment situation (71% vs. 65%). One possible explanation is that individuals experiencing one or two claims were not expecting the change in their employment situation. These individuals with a small number of claims were probably more dissatisfied, given their expectations of

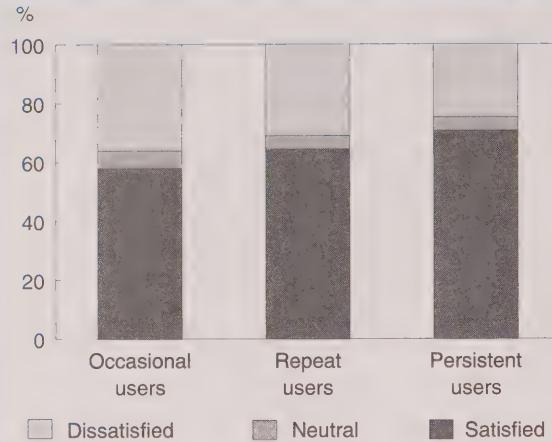
... and claim duration

Whether based on the frequency of claims or the duration of benefits, individuals reporting fishing as their main occupation were the most intense users of EI. Their mean claim frequency was 4.1 between 1992 and 1996. The median number of claims was 5 over the same period, indicating that for the majority it was customary to claim EI benefits every year. The median weeks of benefits was 148, hence the majority of those who collected EI in 1996 had spent more time on EI than at work

between 1992 and 1996. Individuals in forestry occupations were the second most intense users of EI, with a claim frequency of 3.8 and 95.2 weeks of benefits.

The occupation groups displayed an interesting pattern in the mean and median number of claims initiated and weeks of benefits (see *Mean and median*). For almost all occupations, the mean was smaller than the median, indicating a skew to the right in the distributions of claims initiated and weeks of benefits. This implies that the majority of EI claimants had

Chart B: Satisfaction with the previous year's employment situation increased with claims.



Source: Survey of Repeat Use of Employment Insurance

employment for the year. On the other hand, individuals who had many claims most likely worked in seasonal industries and were more prepared for changes in their employment situation.

...and their income

EI claimants' satisfaction with their income was almost exactly the same as their satisfaction with their employment situation—the majority were satisfied with their previous year's income (Chart C).⁶ Again, the proportion satisfied with the previous year's income increased with the number of claims. Just over half (51%) of occasional claimants indicated they were satisfied with the previous year's income, compared with 59% of repeat users and 66% of persistent users. Following the earlier logic, individuals with only one or two claims in the five-year period were likely more surprised by the change in their income, and therefore less satisfied relative to what they *expected* they would earn for the year.

Claimants willing to change employers...

Claimants showed very low attachment to their employer (Table 5). The vast majority reported they would be willing to accept a job with another employer doing similar work.⁷ Over three-quarters (76%) indicated they would be very likely to switch employers, and an additional 16% indicated they

would be somewhat likely to switch. This sentiment was held almost equally by occasional EI claimants, repeat users and persistent users of the program.

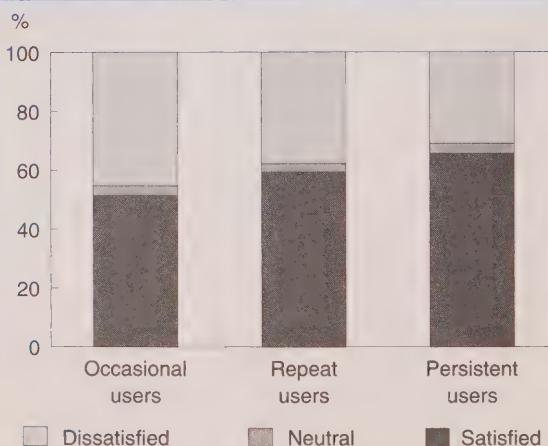
...and willing to do a different kind of work...

Claimants showed slightly more attachment to their type of work. Only 16% reported they would be unlikely to accept a job with another employer doing a different kind of work, which is approximately double the proportion who indicated they would be unlikely to accept another job with a different employer but doing a similar kind of work (8%). Their conviction is somewhat diminished—although 84% of claimants indicated they would be likely to accept another job with another employer doing a different kind of work, only two-thirds of these individuals said they would be very likely to do so. Once again, this opinion was invariant by claim history.

...but not prepared to change province

In a complete reversal to their willingness to switch employers and type of work, EI claimants showed a strong preference to remain in their province of residence. The majority (56%) said they would be very unlikely to accept a job with another employer doing similar work with similar pay, but in a different province. An additional 20% said they would be somewhat unlikely to do so. As before, the opinion was nearly the same for occasional, repeat and persistent EI users.

Chart C: Satisfaction with last year's income also increased with claims.



Source: Survey of Repeat Use of Employment Insurance

Table 5: Willingness to accept another job

If laid off with a possible recall sometime in the future, what is the level of willingness to accept another job with...		All users	Occasional users	Repeat users	Persistent users
		%			
different employer, similar kind of work	very likely	76	76	77	73
	somewhat likely	16	16	16	18
	somewhat unlikely	4	4	4	4
	very unlikely	4	5	4	5
different employer, different kind of work	very likely	54	54	55	53
	somewhat likely	30	30	30	31
	somewhat unlikely	9	9	8	9
	very unlikely	7	8	7	7
different employer, similar kind of work with similar pay, different province	very likely	11	11	11	9
	somewhat likely	13	14	14	10
	somewhat unlikely	20	19	21	22
	very unlikely	56	56	54	58

Source: Survey of Repeat Use of Employment Insurance

Most claimants feel entitled to benefits

Over half (57%) of all claimants felt they were entitled to all of their weeks of benefits, because they "had paid into the program," with the majority indicating strong agreement (Table 6). This attitude was the same, regardless of claim history.

No stigma to EI, say most claimants

A considerable majority of claimants (82%) disagreed with the statement, "If I were collecting EI, I would not want my friends to know about it." A more resounding message comes from the 58% of all claimants who indicated that they strongly disagreed with

Table 6: Opinions on entitlement to, social stigma attached to, and dependence on EI benefits

		All users	Occasional users	Repeat users	Persistent users
		%			
"I deserve all my weeks of benefits because I paid into it."	strongly agree	39	41	37	38
	somewhat agree	18	18	17	17
	neutral	6	6	6	6
	somewhat disagree	16	15	17	16
"If I were collecting EI, I would not want my friends to know about it."	strongly disagree	22	20	23	24
	strongly agree	5	6	4	4
	somewhat agree	6	7	5	5
	neutral	7	7	7	7
"The kind of work I get means that having to depend on EI from time to time is a fact of life."	somewhat disagree	24	25	24	23
	strongly disagree	58	55	60	61
	strongly agree	35	25	41	50
	somewhat agree	28	26	30	29
	neutral	5	6	4	3
	somewhat disagree	14	17	12	9
	strongly disagree	19	27	14	8

Source: Survey of Repeat Use of Employment Insurance

this statement. There was also a slight trend for individuals to feel *less* reluctant to admit that they received EI benefits as their claim history increased—55% of occasional users strongly disagreed with the statement, compared with 60% and 61% of repeat and persistent users, respectively.

Dependence on EI is a fact of life

The majority of EI claimants agreed that, given the type of work they do, dependence on EI from time to time was a fact of life. This opinion rose perceptibly with claim history—51% of occasional users, 71% of repeat users and 79% of persistent users of the EI program agreed.

Summary

Certain demographic characteristics are associated with repeat use of EI. Repeat users tend to be men and to have lower educational attainment. Persons over 35 constitute a disproportionate share of repeat users, as do residents of Atlantic Canada and Quebec.

Certain occupations, specifically the trades and those specific to primary industries, use regular EI benefits more than their share of paid employment would suggest. Based on both claim frequency and claim duration, persons in fishing occupations are the most intense users of EI.

Changes to the EI program since 1997

Bill C-12 enacted some extensive changes to the Unemployment Insurance (UI) program in addition to the name change to Employment Insurance (EI). The program was changed from a weeks-based system, to an hours-based one. Effective January 1, 1997, the entrance requirement switched from a given number of weeks, depending on the regional unemployment rate, to the equivalent in hours, assuming a 35-hour work-week (Government of Canada, 1996; HRDC, 1996).

A number of provisions were also implemented, some specifically targeted at repeat users of EI. These include the Divisor, the Intensity Rule, the decrease in benefit duration and the Clawback. The Divisor is a rule that encourages individuals to work two (35-hour equivalent) weeks more than the minimum requirement for their region in order to maximize their weekly benefits. The Intensity Rule results in a decrease in the EI benefit rate (of the *next* regular EI claim) based on past EI claims to a maximum of 5 percentage points, for a minimum rate of 50 percent. Finally, the Clawback forces high-income individuals to pay back a portion of their regular EI benefits at tax time, based on their claim history and their net income. Specifically, individuals with a *net* income of at least \$39,000 and 20 weeks of regular benefits over the previous five-year period (as of June 30, 1996) would see 30 to 100 percent of their benefits taxed back.

Continued dependence on EI?

EI administrative files made it possible to follow up on survey respondents to see if they continued to receive regular EI benefits in subsequent years.

More intense users of EI were more likely to claim benefits in the following years. The most striking results are for the persistent users of the EI program. In 1997, the year after the survey and after implementation of the changes to EI, 79% of persistent users had initiated another regular claim. The number of persistent users initiating a claim in 1998 dropped to 60%. Nonetheless, over half of all persistent users initiated regular claims in both 1997 and 1998.

Continued use of EI in 1997 and 1998

Claims in 1992-1996	Respondents initiating a regular EI claim in...		
	1997	1998	1997 and 1998
%			
1	20	16	6
2	34	26	14
3	48	34	22
4	63	46	35
5	79	60	53

Sources: EI administrative data; Survey of Repeat Use of Employment Insurance

The majority of EI claimants were satisfied with their employment and income situation. They expressed a willingness to change employers and type of work. However, they showed strong geographic immobility; the majority felt strongly attached to their current province. Claimants also showed strong feelings of entitlement to their benefits. In addition, very few perceived any social stigma attached to receiving EI benefits, given their expressed lack of reluctance to admit receipt of EI benefits to friends and family.

Finally, the majority felt that given the type of work they do “dependence on EI from time to time is a fact of life.” Furthermore, this feeling increased with claim history. The continued dependence on the program was supported by EI administrative records, which showed a strong link between previous claim history and future use of the EI program (see *Changes to the EI program since 1997*). More than half of those who had an EI claim *every year* from 1992 to 1996 proceeded to have claims in both 1997 and 1998—further evidence of the perseverance of repeat usage of EI.

Perspectives

Notes

1 Known as the Unemployment Insurance (UI) program prior to July 1996.

2 The regions used for the EI program are usually census metropolitan areas or a combination of rural areas.

3 Occupation is defined by an individual's main employer in 1997, which is the job they may have returned to *after* an unemployment spell (and their EI claim). It would have been preferable to have the occupation *prior* to the EI claim, however this was not available. Only 90.4% of individuals reported a main occupation in 1997, so the percentages have been proportionately adjusted to sum to 100%. The other 9.6% of respondents consists of 0.2% of individuals that did not state their occupation and 9.4% who did not have an occupation to report in 1997. The figures for employees have similarly been adjusted to sum to 100%.

4 Most fishermen are covered by separate EI benefits and therefore were not part of the sample in this study. Individuals in fishing occupations receiving regular benefits are non self-employed fishermen.

5 The exact wording for the question on the EI claimants level of satisfaction with their employment situation was, “Now thinking about the past year and keeping in mind that you may have been both employed and unemployed during that time, please tell me if you were satisfied or dissatisfied with your employment situation.” The response choices were satisfied, dissatisfied, or neither satisfied nor dissatisfied. Individuals who responded with (dis)satisfied were further probed by asking, “Were you very (dis)satisfied or somewhat (dis)satisfied?” Individuals not answering these questions were excluded from the calculations.

6 The question on satisfaction with income was, “Keeping in mind that your income may have varied over the past year, were you satisfied or dissatisfied **in general** with your income?”

7 The question was, “Thinking of your current (or last, if the individual was unemployed at the time of the survey) job – suppose you are laid off from this job with a possible recall sometime in the future. In the meantime, another employer in your area offers you a similar job, in terms of work and pay. Would you be likely or unlikely to accept this offer?”

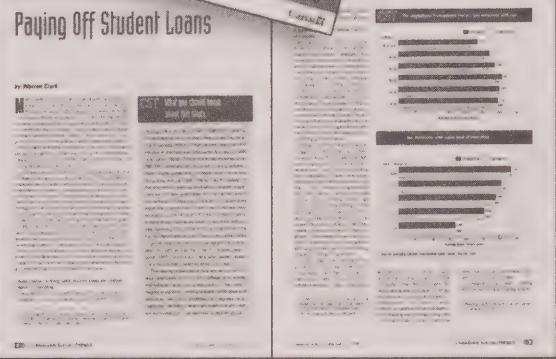
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Experiencing low income for several years

René Morissette and Xuelin Zhang

Some believe that the same people have low incomes year after year. According to this view, the population with low income is static, exhibiting little, if any, turnover. However, while living with low income is the long-term reality for some, considerable movement into and out of this state takes place over time (Finnie, 1997; Laroche, 1997; Morissette and Drolet, 2000).

With the advent of longitudinal data such as that available in the Survey of Labour and Income Dynamics (SLID), the understanding of low income is greatly enriched: it is now possible to follow individuals over time and to determine the duration of any low income in a given period. This provides a measure of the extent to which Canadians are exposed to low income. Using SLID data, this study analyzes which people were most likely to have had low income for several years between 1993 and 1998. While earlier studies are confirmed (see *Previous findings updated*), some new results emerge for a more nuanced profile of the population at risk.

A cross-sectional view of low income

An examination of the annual incidence of low income (see *Low income cutoffs*) shows that, on average, some 13% of all individuals lived in families with low income between 1993 and 1998 (Table 1). For these persons, family income was 31% to 38% below the low income cutoff, depending on the year and the sample considered. While these cross-sectional data provide interesting information, they tell nothing about the number of years these people experienced low income during the period. To answer this question, one needs longitudinal data.

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Previous findings updated

A previous study, covering 1993 to 1996, found that persons most likely to experience low income for at least one year or for four consecutive years had less education, had work limitations throughout the period, or were members of visible minorities, recent immigrants, unattached individuals or members of lone-parent families (Morissette and Drolet, 2000). Groups at high risk of experiencing low income did not necessarily have a substantial income gap while having low income.¹ This article confirms that, during the 1993 to 1998 period, these groups had high chances of having low income for at least one year. As well, their chances of having low income for at least four years or for six consecutive years were also high. And again, higher risk of low income was not necessarily associated with the severity of low income.

While the earlier study found that 5% of the population had low income for all four years of the 1993 to 1996 period, 3% of the population were in low income for all six years of the 1993 to 1998 period.

The high risk of low income among visible minorities observed previously does not apply to those born in Canada. Rather, the higher risk was found only among immigrant visible minorities. Since recent immigrants in general are more likely to have low income, the high risk faced by visible minorities may be partly related to the difficulties faced by new entrants to the Canadian labour market.

Having a work limitation is not necessarily a permanent condition. Between 1993 and 1997, of all individuals who had a work limitation in one year, 27% to 35% no longer had a work limitation in the next year. As a result, only 2% of all individuals had a work limitation for all six years between 1993 and 1998 while 15% had a work limitation during part of the period. As expected, risks of long-term low income were much higher among the former than among the latter. Hence, these two groups must be distinguished in any analysis of persistent low income.

Low income cutoffs

Low income cutoffs (LICOs) are established using data from the Survey of Household Spending (or its predecessor, the Family Expenditure Survey). They are intended to convey the income level at which a family may need to spend a greater-than-average proportion of its income on the basics (food, shelter and clothing). The LICO varies by family size and community size.

Although LICOs are often referred to as poverty lines, they have no official status as such, and Statistics Canada does not recommend their use for this purpose.² Separate low income cutoffs can be calculated with before- or after-tax income.³ This

study uses the latter because it is a better indicator of disposable income.

The number of years of low income during a given period and the duration of a spell of low income are two different concepts.⁴ First, someone may have started a spell in 1991 and moved beyond it in 1995. If so, the number of years he or she had low income during the 1993 to 1998 period would equal two (1993 and 1994), while the duration of the spell of low income would be four years (1991, 1992, 1993 and 1994). Second, someone may have experienced two spells of low income lasting one year each, for two years total, during the 1993 to 1998 period.

A longitudinal view

Had there been no turnover in this 13%, the percentage of individuals who had low income for at least one year during the period would have remained at that level. Conversely, had the population been replaced completely by a new group after one year, 78% (13% times six) of Canadians would have experienced low income for at least one year. Reality lies somewhere between these two extremes: 24% of persons lived in families with low income for at least one year between 1993 and 1998 period (Table 2).

Some people do live in strained circumstances persistently. About 8% of Canadians lived in families experiencing low income for four years or more during the study period. Only 3% experienced low income for six consecutive years. At the same time, some 76% of Canadians lived in families with no experience of low income between 1993 and 1998.

Long-term low income among children and seniors

In recent years, growing attention has been paid to children living in families with low income. Some analysts have pointed out that growing up in a low income family may increase the probability of

encountering low income as an adult (Corak, 1998). If so, families with low income would produce a new generation at high risk of exposure.

About 12% of all children under six lived in families that had low income for four years or more, compared with roughly 8% of all persons. Some 29% of these children experienced low income for at least one year.

Conversely, seniors (65 and over) experienced low income less frequently. Between 1993 and 1998, only 6% had low income for four years or more. Since the early 1980s, the growth of income from the Canada and Quebec Pension Plans, from private pensions and from the Guaranteed Income Supplement and Old Age Security has helped to decrease the percentage of seniors in low income (Myles, 2000).

The small percentage of those 65 and over who experienced low income hides substantial differences between men and women.

Table 1: Cross-sectional statistics on low income after tax (1992 LICO base)

	1993	1994	1995	1996	1997	1998
%						
Low income individuals	12.0	13.1	12.6	14.2	13.7	12.2
Income deficit*				1996 \$		
All individuals	6,050	6,340	6,620	6,190	6,750	6,860
Excluding those with negative family income	5,920	5,910	5,990	5,860	5,850	5,960
Income deficit*/LICO				%		
All individuals	32.3	33.1	34.6	32.6	34.8	37.5
Excluding those with negative family income	31.5	31.2	31.7	30.9	31.3	32.2

Source: Survey of Labour and Income Dynamics, 1993 to 1998

* Low income cutoff minus family income.

Table 2: People with low income, 1993 to 1998

Characteristics	Years of low income									
	0	1	2	3	4	5	6	1+	4+	
Both sexes	76.0	8.0	4.7	3.0	2.9	2.2	3.3	24.0	8.4	
Men	78.0	7.5	4.5	2.3	2.8	2.0	3.0	22.0	7.8	
Women	74.0	8.4	4.9	3.7	2.9	2.5	3.6	26.0	9.0	
Age in 1993										
Less than 6	71.0	7.9	5.8	3.3	3.7	3.4	5.0	29.0	12.1	
6 to 17	72.4	9.7	5.3	3.5	3.3	2.8	3.0	27.6	9.1	
18 to 24	61.5	13.4	8.8	5.5	5.4	2.4	3.0	38.5	10.8	
Not a student	75.9	9.8	--	--	--	--	--	24.1	7.0	
Student	56.5	18.4	10.8	5.6	4.0	2.9	1.8	43.5	8.7	
25 to 34	76.5	7.4	5.5	2.7	2.4	2.7	2.8	23.5	7.9	
35 to 44	80.9	6.8	3.0	2.2	2.7	1.5	3.0	19.1	7.2	
45 to 54	81.4	5.0	3.7	2.7	2.2	1.7	3.5	18.6	7.4	
55 to 64	77.3	7.7	4.7	2.5	2.0	2.3	3.6	22.7	7.9	
65 and over	84.1	6.2	1.6	1.9	1.8	--	3.6	15.9	6.2	
Men	94.5	--	--	--	--	--	--	5.5	--	
Women	83.8	7.2	2.5	1.4	--	--	3.1	16.2	5.0	
Family composition (all years)										
Unattached	61.0	7.2	4.1	4.4	3.4	4.0	15.9	39.0	23.3	
Couple, no children	91.3	4.6	1.7	1.2	--	--	--	8.7	1.1	
Couple with children	84.4	5.3	3.1	1.7	1.4	1.7	2.5	15.6	5.6	
Lone parent	42.4	5.8	3.5	10.3	8.4	10.2	19.4	57.6	38.0	
Other	84.7	4.6	3.2	--	4.3	--	--	15.3	6.8	
Changed over period	67.7	12.2	7.6	4.2	4.1	2.4	1.9	32.3	8.4	
Family composition in 1993										
Unattached	58.8	9.8	6.7	5.5	5.1	3.7	10.5	41.2	19.3	
Couple, no children	86.9	6.1	2.6	1.7	1.4	0.8	--	13.1	2.7	
Couple with children	80.2	7.6	4.5	2.3	1.9	1.5	2.1	19.8	5.5	
Lone parent	47.6	11.5	7.5	8.0	6.7	7.6	11.1	52.4	25.4	
Other	76.5	8.3	5.0	2.3	4.4	2.8	0.7	23.5	7.9	

Source: Survey of Labour and Income Dynamics

About 16% of senior women had low income for at least one year, compared with only 6% of men. In part, this reflects their lower or limited participation in the labour market in earlier years, which in turn yielded little or no pension income.

Persons aged 18 to 24 in 1993 who were students at least one year during the period were much more likely than their non-student counterparts to experience low income for at least one year (44% versus 24%), mainly because they were much more likely to have low income for up to two years. This suggests that low income is only a temporary state for most students.

Lone-parent families and unattached individuals more vulnerable

While 8% of the population experienced low income for four years or more, some groups were at much greater risk of exposure than others. Fully 38% of people living in families headed by a lone parent were in this situation for four years or more. The corresponding number was 23% for unattached individuals. This is much higher than the corresponding percentage for people living in families composed of couples with children (6%).

These figures refer to people whose family type remained unchanged over the study period. Obviously, families change over time. Some women who were

lone mothers in 1993 may have eventually married. Since marriage may help lone-parent families move out of low income, looking only at families that remain lone-parent for all six years would overestimate, for this family type, the percentage of individuals in low income for several years. The same argument can be made for unattached individuals. For this reason, the study also presents data by family type defined as of 1993.

When this is done, the incidence of longer-term low income drops markedly. For instance, of all persons living in families headed by a lone parent in 1993, some 25% experienced low income for four years or more. Corresponding figures for unattached individuals and persons living in families composed of couples with children were 19% and 6%.

The high risk of exposure to low income observed for lone-parent families probably reflects a combination of factors. First, only one parent can enter the labour market and contribute to family income. Second, institutional factors—such as the availability and cost of child-care services—combined with limited labour market opportunities may lead some lone parents to decide not to participate in the labour market. Third, the jobs available may be restricted by these parents' need to combine family and work responsibilities. Lone parents may limit themselves to jobs relatively close to school or child-care facilities and may have to refuse high-paying jobs that also involve long hours. Or they may be able to work only part time.

For a more complete picture of low income, several other individual characteristics, such as educational attainment, visible minority status, immigration status and work limitation status, need to be examined. Persons aged 16 and over are studied here.

People with work limitations are at risk

People who had work limitations throughout the period had a relatively high chance of encountering low income.⁵ Almost 50% were in low income for at least one year between 1993 and 1998 (Table 3). Furthermore, 16% experienced low income for all six years. In contrast, 19% of persons who experienced no work limitations during the period had low income for at least one year, and only 2% had low income for all six years. People whose work limitation status changed, that is, who had work limitations for part of the period, were between these two extremes.

Several factors may contribute to this difference. First, some people may be unable to work and forced to rely on government transfers as their major source of income. For some, government transfers and earnings by other members of the family may not be large enough to lift them out of low income. Second, having a work limitation may restrict the jobs a person can perform, limiting access to high-paying positions. Third, for the tasks that can be performed as efficiently as others, persons with work limitations may receive lower wages. Fourth, some employers may discriminate through hiring rather than wages: they may simply prefer hiring people who do not have work limitations. Whatever the underlying mechanisms, having a work limitation dramatically increases the chances of low income.⁶

Visible minorities and immigrants also experience difficulty

Persons who immigrated to Canada after 1976, many of whom are members of visible minorities, had a high risk of experiencing low income.⁷ At least 20% experienced low income for four years or more, compared with 7% of the Canadian-born population. In comparison, only 6% of persons who arrived in 1976 or before experienced low income for four years or more. Members of a visible minority were also more likely than others to have low income for four years or more: about 21% versus 7%.

The reasons for these differences are unclear. The longer immigrants are in the country, the more their economic situation improves. When they enter the labour market, they generally receive lower wages than the Canadian-born. If the period during which immigrants have a wage disadvantage lasts longer than it used to, they may, as a result, have a greater risk of encountering low income in the long term.

The higher risk among both visible minorities and the post-1976 group of immigrants exists even after differences in age and level of education are taken into account (Table 4).⁸ Other factors important in determining levels of employment income, such as language skills and relevant work experience, have yet to be assessed. The high risk of having low income (for at least one year) found for visible minorities does not apply to those who are Canadian-born (Table 3). Among the latter, only 17% were in low income for at least one year, much less than the 39% for foreign-born visible minorities.⁹

Table 3: People 16 and over with low income, 1993 to 1998

Characteristics	Years of low income									
	0	1	2	3	4	5	6	1+	4+	
Both sexes										%
Men	76.8	7.8	4.6	2.9	2.8	2.0	3.1	23.2	7.9	
Women	79.6	7.1	4.3	2.1	2.6	1.8	2.5	20.4	6.9	
Age in 1993										
16 to 24	74.2	8.4	4.9	3.7	3.0	2.2	3.7	25.8	8.9	
25 to 34	61.6	14.5	8.6	5.6	5.5	2.6	2.6	38.4	10.7	
35 to 44	76.5	7.4	5.5	2.7	2.4	2.7	2.8	23.5	7.9	
45 to 54	80.9	6.8	3.0	2.2	2.7	1.5	3.0	19.1	7.2	
55 to 64	81.4	5.0	3.7	2.7	2.2	1.7	3.5	18.6	7.4	
65 and over	77.3	7.7	4.7	2.5	2.0	2.3	3.6	22.7	7.9	
Education (all years)										
Less than high school	84.1	6.2	1.6	1.9	1.8	--	3.6	15.9	6.2	
High school completed	73.2	7.5	3.5	3.3	3.3	3.1	6.2	26.8	12.6	
Postsecondary*	80.0	6.0	5.2	1.5	1.8	1.4	4.0	20.0	7.2	
University	80.0	7.6	4.5	2.5	2.3	1.4	1.7	20.0	5.4	
Education changed	89.3	4.1	2.6	1.8	--	--	--	10.7	2.2	
Student status										
Not a student	62.5	16.7	4.7	0.5	3.8	2.5	9.4	37.5	15.7	
1 year	82.2	6.1	3.2	2.2	1.8	1.5	3.1	17.8	6.4	
2 years	70.1	9.0	5.7	3.3	--	--	--	29.9	11.9	
3 years	64.2	15.1	8.1	--	--	--	--	35.8	8.4	
4 years	57.6	12.8	9.6	--	--	--	--	42.4	14.6	
5 years	54.0	14.3	13.0	--	--	--	--	46.0	14.2	
6 years	50.5	19.9	--	--	--	--	--	49.5	18.0	
Work limitation (all years)										
No work limitation	62.2	9.8	10.1	--	--	--	--	37.8	12.8	
Work limitation	81.1	7.0	4.2	2.1	2.2	1.5	1.8	18.9	5.5	
Status changed	51.2	9.6	7.9	--	--	6.8	16.3	48.8	28.4	
Minority status										
Visible minority	69.5	9.5	5.9	4.5	3.8	2.8	4.1	30.5	10.7	
Canadian-born	65.4	7.0	4.4	--	8.1	--	9.2	34.6	20.8	
Immigrant	--	--	--	--	--	--	--	17.2	--	
Not a visible minority	82.8	7.9	4.9	--	9.7	--	10.4	38.8	24.0	
Immigration status										
Canadian-born	77.7	7.8	4.6	3.0	2.4	1.9	2.6	22.3	6.9	
Immigrant, before 1977	77.4	8.0	4.5	2.9	2.5	1.9	2.9	22.6	7.3	
Immigrant, 1977 to 1986	81.4	6.4	3.7	2.8	2.1	--	--	18.6	5.6	
Immigrant, after 1986	59.1	7.1	--	--	--	--	--	40.9	20.3	
Family composition (all years)										
Unattached	54.1	11.2	7.0	4.0	4.0	2.2	1.7	30.0	7.9	
Couple, no children	61.0	7.2	4.2	4.4	3.4	4.0	15.9	39.0	23.3	
Couple with children	91.3	4.6	1.7	1.2	--	--	--	8.7	1.1	
Lone parent	85.2	4.9	3.0	1.6	1.3	1.6	2.4	14.8	5.3	
Other	40.0	--	--	12.4	8.7	11.1	17.2	60.0	37.0	
Changed over period	86.4	4.9	3.0	--	--	--	--	13.6	5.0	
Family composition in 1993										
Unattached	70.0	7.8	7.2	--	--	--	--	24.8	6.9	
Couple, no children	58.8	9.9	6.7	5.5	5.1	3.7	10.5	41.2	19.3	
Couple with children	86.9	6.1	2.6	1.7	1.4	0.8	--	13.1	2.7	
Lone parent	81.0	7.1	4.5	2.3	1.9	1.4	1.8	19.0	5.1	
Other	50.1	11.9	7.3	7.5	7.0	6.9	9.4	49.9	23.3	
Unknown	78.2	8.7	4.5	2.4	3.5	2.1	--	21.8	6.3	

Source: Survey of Labour and Income Dynamics

* Some or completed.

Table 4: Probability of being in low-income, 1993 to 1998

Characteristics	At least one year	At least four years	All six years
Reference group			
Both sexes	18.3	3.9	0.8
Men	16.2	3.6	0.7
Women	20.3	4.2	0.9*
Age			
16 to 24	24.3*	4.5*	0.9*
25 to 34	22.5	5.4	1.1
35 to 44	18.2	4.5*	1.0*
45 to 54	16.2	4.7*	1.3*
55 to 64	19.3*	4.2*	0.9*
65 and over	9.9	1.2	0.2
Education			
Less than high school	26.4	9.0	2.6
High school completed	17.7*	4.3	1.5
Postsecondary—some or completed	16.0	2.7	0.5
University	8.3	1.1	0.1
Education changed	19.9	3.8*	0.6*
Student status			
Not a student	17.0	3.5	0.8
1 year	24.9	8.0	1.7
2 years	27.2	5.2*	1.1*
3 years	32.9	11.1	1.2*
4 years	35.5	11.1	3.4*
5 years	37.9	14.5	0.1*
6 years	28.2	8.9	1.5*
Work limitation			
No work limitation	14.0	2.6	0.6
Work limitation	43.4	14.7	3.7
Status changed	26.0	5.9	1.2
Minority status			
Visible minority	20.8*	11.0	5.4
Not a visible minority	18.2	3.8	0.8
Immigration status			
Canadian-born	18.0	3.9	0.9
Immigrant, before 1977	16.8*	2.6	0.4
Immigrant, 1977 to 1986	37.1	8.2	1.2*
Immigrant, after 1986	37.7	10.4	1.6*
Family composition (all years)			
Unattached	41.5	22.0	11.7
Couple, no children	8.8	0.9	0.2
Couple with children	14.3	4.2	1.4
Lone parent	53.2	27.9	10.6
Other	9.3*	2.0	0.2
Changed over period	24.6	4.9*	0.8*
Family composition in 1993			
Unattached	41.3	16.5	6.7
Couple, no children	13.4	2.1	0.3
Couple with children	16.0	3.5	1.1
Lone parent	39.3	16.2	6.3
Other	16.4*	3.1*	0.2

Source: Survey of Labour and Income Dynamics

Note: Probabilities are conditional on the average values of the explanatory variables. Probabilities associated with family composition, all years and as of 1993, are from two separate logistic regressions. There are six logistic regressions, three for each type of probability for each family composition.

* Not statistically different from the coefficient of the reference group at the 5% level.

Highly educated at low risk

The risk of exposure to low income depends on the number of earners in a family and the level of income of each earner. Education tends to be a major determinant of earnings.

Persons with a university degree are generally insulated from low income. Almost 90% avoided it between 1993 and 1998, compared with 73% for persons who had not completed high school.

Higher levels of education may reduce the likelihood of having low income in two ways. First, because highly educated persons—whether main¹⁰ or secondary earners—generally receive higher wages, they are less likely to have low income at a given moment. Second, as long as their wages increase more rapidly over time than those of persons with less education, they will probably move out of low income more quickly.

Higher risk not necessarily associated with severity

Whether a family experiences low income is not all that matters. The low income gap—the difference between the low income cutoff (LICO) and a family's income—is also relevant. The size of the income gap clearly affects a family's purchasing power. Some persons, while more likely than others to receive low income, may have *higher* family incomes than others experiencing a low income state. In other words, a higher incidence of low income is not necessarily associated with a greater depth of low income or a greater income gap.

Between 1993 and 1998, the average income gap for the population aged 16 and over that

Table 5: Income deficit while in low income, 1993 to 1998

Characteristics	Deficit	Relative deficit**
	1996 \$	%-point
Reference group		
Both sexes	5,060	-
Men	5,290	
Women	4,890	-0.8*
Adults 25 to 34	5,380	-
Elderly (65 and over)	1,950	-11.4
High school graduates	4,970	-
University graduates	6,210	4.9
Not a student	4,540	-
Student for six years	6,450	4.8*
Canadian-born	4,820	-
Immigrant, before 1977	5,770	1.0*
Immigrant, 1977 to 1986	5,740	-3.2*
Immigrant, after 1986	7,050	-2.6*
Visible minority	7,080	4.0*
Not a visible minority	4,810	-
With work limitation	4,470	0.8*
No work limitation	4,960	-
Unattached individuals	3,700	8.0
Couples with children	5,410	-
Lone parents	5,410	1.0*

Source: Survey of Labour and Income Dynamics

Note: Persons 16 and over (in 1993) who had at least one year of low (but not negative) income between 1993 and 1998.

* Not statistically different from the coefficient of the reference group at the 5% level.

** Compared with reference group.

income averaged \$4,970 below their LICO, compared with \$6,210 for university graduates. One reason could be that following a layoff from a high-paying job, university graduates may take some time to find a new job with the same pay level, resulting in a longer spell of unemployment and a substantial decrease in family income.

Are these qualitative differences statistically significant? Yes. Other things being equal, elderly people had an income gap (as a percentage of the associated low income cutoff)¹² some 11 percentage points lower than that of people aged 25 to 34. Similarly, university graduates had a relative income gap about 5 percentage points higher than that of high school graduates.

No statistically significant differences in the relative income gap existed within the following groups: immigrants versus the Canadian-born, visible minorities versus others, persons with work limitations versus others, and lone-parent families versus couples with children. In contrast, the relative income deficit of unattached individuals was 8 percentage points higher than that of persons living in families composed of couples with children.¹³

How long does a spell of low income last?

Given that 24% of the population had low income for at least one year during the 1993 to 1998 period and only 13% of the population, on average, had low income, the population under study was not static; that is, it underwent substantial turnover. A more direct way to examine turnover in this population is to calculate how long people remained in low income.

Many factors lead to a change in low income status. Being laid off from a high-paying job, having a new child, moving from a small to a large community or experiencing a family breakdown may push a family into low income. Similarly, persons who escape low income may do so by securing a higher-paying job, getting married, moving from a small to a large company, or having a child leave home or enter the labour market.

Of all those who started a spell of low income in 1994, some 61% moved out of this state in 1995 (Table 6). Similarly, of all who started a spell of low income in 1995, some 50% escaped low income in 1996. Thus, 50% to 60% of persons who began a spell of low income in one year no longer had low income the following year. These high exit rates confirm a substantial turnover in this population.

encountered low income for one year or more was \$5,060 (in 1996 dollars) (Table 5).¹¹ In other words, the average family income for persons in this group was \$5,060 below their family's LICO. The average gap varied from group to group; for example, for a person aged 25 to 34 it was \$5,380, compared with only \$1,950 for a person aged 65 and over. Consequently, elderly people not only had a relatively low risk of experiencing low income for several years, they also had a smaller income gap when they did encounter low income.

High school graduates had a higher risk of low income than university graduates. However, when they were in a low income situation, their family

Table 6: Duration of new low income spells

Duration (years)	Year low income spell began			
	1994	1995	1996	1997
%				
One	60.8	50.3	50.8	51.7
Two	9.5	14.6	17.3	48.3*
Three	7.9	12.0	37.9*	-
Four	8.2	23.1*	-	-
Five	13.7*	-	-	-

Source: Survey of Labour and Income Dynamics, 1993 to 1998

* The spell may have lasted longer.

On the other hand, some spells of low income last a long time: of all Canadians falling into low income in 1994, some 30% remained for three years or more.¹⁴ Corresponding percentages for 1995 and 1996 were 35% and 38%. Furthermore, 14% of individuals who started a spell of low income in 1994 were in this state for five years or more. This indicates a persistence of low income in Canada.¹⁵

Taken together, these figures provide strong evidence against the extreme views that people with low income remain in low income, or that they are there for only a short period (one year). The reality is more complex and lies between the two.

High-risk groups with low income

The extent to which some groups are represented in the population with low income depends not only on their risk of exposure, but also on their relative number in the whole population.

Many people, such as recent immigrants, members of visible minorities, those with work limitations, or those in lone-parent families, have a high risk of exposure to low income. However, they represent a small proportion of the population. Consequently, it is not surprising that they account for a relatively small share of those with low income.

For instance, 32% of persons living in lone-parent families were in low income in 1993, compared with only 8% of those in families composed of couples with children. Yet, because they represented only 7% of the entire population, people in lone-parent

families accounted for just 20% of those in low income in 1993.¹⁶ In other words, 80% of the population in low income in 1993 consisted of people not in lone-parent families.

Cumulated income and cumulated low income cutoffs

While the number of years in low income during the 1993 to 1998 period provides one simple measure of the persistence of low income, it does not allow a comparison of the extent to which different families were in straitened circumstances during the six-year interval. For instance, family A, which was in low income for six consecutive years, may have had a larger cumulated (over six years) income than family B, which was in low income for only four years.

To see this, assume that the low income cutoff for these two families equals \$20,000 (in constant dollars) and is steady throughout the period. Family A may have had a constant disposable income of \$18,000 between 1993 and 1998 and, as a result, have a cumulated income of \$108,000 (\$18,000 times six) over the 1993 to 1998 period and experience low income for all six years. Its six-year family income-to-LICO ratio would equal 0.90 (\$108,000/\$120,000). In contrast, family B may have received \$15,000 during the first four years and \$21,000 in the last two years. If so, it would be in low income for only four years but still have a cumulated income of only \$102,000 (\$15,000 times four plus 21,000 times two). As a result, it would have a six-year family income-to-LICO ratio of 0.85 (\$102,000/\$120,000).

The question then becomes: what percentage of individuals live in families whose cumulated income is less than their cumulated low income cutoff? In other words, what percentage of people have a six-year income-to-LICO ratio less than 1.0?

Overall, 8% of persons aged 16 and over lived in families whose cumulated income was less than their cumulated low income cutoff over the study period (Table 7). This percentage was somewhat smaller than that of people with low income in a given year.¹⁷ All groups with a high risk of experiencing low income for several years—workers with lower education, students, persons with work limitations, visible minorities, post-1976 immigrants, unattached individuals and lone-parent families—also had a high risk of having a six-year income-to-LICO ratio less than 1.0.

**Table 7: Incidence of low income,
1993 to 1998**

	Six-year family income less than:		
	125% of six-year LICO	Six- year LICO	75% of six-year LICO
Both sexes	14.1	7.9	3.1
Men	11.6	6.7	2.9
Women	16.5	9.1	3.3
Age		%	
16 to 24	15.1	9.8	3.3
25 to 34	14.6	8.4	3.3
35 to 44	12.1	6.9	3.3
45 to 54	11.5	8.1	3.8
55 to 64	14.6	8.2	3.9
65 and over	18.7	6.0	--
Education (all years)			
Less than high school	22.7	12.5	4.9
High school completed	13.6	7.3	3.1
Postsecondary*	10.8	5.3	1.9
University	4.7	3.1	--
Education changed	16.4	11.4	4.8
Student status			
Not a student	12.8	6.5	2.5
1 year	16.3	11.9	--
2 years	12.7	7.5	--
3 years	21.9	14.3	--
4 years	20.3	13.1	--
5 years	21.1	--	--
6 years	15.6	11.4	--
Work limitation			
No work limitation	9.7	5.6	2.2
Work limitation	37.0	27.7	13.7
Status changed	18.4	10.9	4.6
Minority status			
Visible minority	26.5	19.7	10.2
Not a visible minority	13.1	7.0	2.5
Immigration status			
Canadian-born	13.1	7.2	2.7
Immigrant, before 1977	13.0	6.0	2.2
Immigrant, 1977 to 1986	31.9	22.4	--
Immigrant, after 1986	33.0	26.3	--
Family composition (all years)			
Unattached	40.8	24.6	11.2
Couple, no children	5.3	1.3	--
Couple with children	11.2	6.0	2.6
Lone parent	55.6	46.3	18.9
Other	8.1	5.2	--
Changed over period	12.8	6.8	2.4
Family composition in 1993			
Unattached	31.4	19.0	8.4
Couple, no children	6.9	2.8	0.5
Couple with children	10.3	5.1	2.1
Lone parent	36.2	26.4	11.2
Other	10.4	5.7	1.2

Source: Survey of Labour and Income Dynamics

* Some or completed.

Conclusion

According to longitudinal data, roughly 50% of individuals who started a spell of low income were in that state for only one year between 1993 and 1998. On the other hand, as many as 30% of persons who started a spell of low income were there for three or more years. This suggests that low income does persist in some cases.

On average, some 13% of Canadians lived in families that had low income. However, as many as one in four experienced low income for one year or more during this six-year period. About 8% did so for at least four years. Some people, such as those in lone-parent families or those with a work limitation, were exposed to four consecutive years of low income much more frequently. Others, such as those with a university diploma, appear to have been insulated.

Twelve percent of children under six experienced low income for at least four years. Though four years may seem a short period, it represents a sizeable percentage of a young child's life (Phipps, 1999). Conversely, only 6% of people 65 and over experienced low income for four years or more.

The results also show that for many persons with a work limitation, government transfers and potential earnings from secondary earners may not lift them out of low income. Having a limitation at work severely limits earnings and probably prevents some people from achieving higher incomes.

Foreign-born visible minorities and post-1976 immigrants were more likely than others to experience persistent low income. This suggests that the problems faced by members of visible minorities and recent immigrants may be intimately related.

Perspectives

Notes

1 The low income gap is the low income cutoff minus family income.

2 For a detailed explanation, see "On poverty and low income" (Catalogue no. 13F0027XIE), by I.P. Fellegi. This article is available on Statistics Canada's website (www.statcan.ca). Select "Products and services", then "Research papers" and "Personal finance and Household finance".

3 · After-tax income refers to income after federal and provincial income taxes and government transfers.

4 See Duncan and Rodgers (1991) for a discussion of various measures of persistent poverty. Logistic regression can be used to model the duration of spells of low income (Hosmer and Lemeshow, 1989). Multiple episodes are taken into account in Huff Stevens (1995) and Laroche (1997).

5 A work limitation is a long-term physical condition, mental condition or health problem that limits the kind or amount of activity that can be performed at work. People who had work limitations for all six years of the 1993 to 1998 period, people who had no work limitations during the period, and people whose status changed (that is, who had work limitations part of the period) represented 2%, 83% and 15%, respectively, of the population 16 and over.

6 These mechanisms will tend to decrease families' market income by lowering the earnings of the main earner or those of other earners.

7 Among individuals aged 16 and over (longitudinal sample), members of visible minorities account for 67% of immigrants who came to Canada after 1976. Members of visible minorities represent 7% of the population; immigrants, 17%. Immigrants who arrived before 1977, between 1977 and 1986, and after 1986 represent 12%, 3% and 2%, respectively, of the population. Immigrants represent 76% of members of visible minorities and members of visible minorities represent 35% of all immigrants.

8 Using logistic regressions, the study performed a multivariate analysis of the probability of experiencing low income for at least one year, for at least four years, and for six consecutive years. Three logit models were estimated separately, one for each probability. The control variables were sex (two categories), age (six groups), educational attainment (five categories), student status (seven categories), work limitation status (three categories), visible minority status (two categories), immigration status (four categories), and family composition (six categories). When the probabilities of having low income were calculated, say, by age group, the other control variables were set to their average values (Table 4). The higher risk among visible minorities remains when one considers the probability of experiencing low income for at least four years or for six years. Among post-1976 immigrants, the higher risk remains for the probability of experiencing low income for at least one year or for at least four years.

9 This finding is consistent with previous work by Hum and Simpson (1998), which shows that the wage disadvantage observed for visible minorities in the aggregate applies more to those who were foreign-born than to those who were Canadian-born. This pattern remains in a multivariate

analysis. The probability of being in low income for at least one year is 11% for Canadian-born visible minorities, which is not significantly different (at the 5% level) from the 18% for other Canadian-born persons. For foreign-born visible minorities, the figure is 36%.

10 The main income earner is the family member with the highest annual income. Apart from the logistic regressions mentioned in note 8, logistic regressions were estimated for a subsample of individuals in families whose main income earner remained unchanged throughout the 1993 to 1998 period. In this case, the control variables refer to the characteristics of the main income earner of the family to which an individual belongs (rather than the characteristics of the individual). The resulting subsample consists of 60% of the population. However, as Jenkins (1999) emphasizes, "if one restricts analysis to persons and households who do not experience compositional change, one will be omitting a significant fraction of the population and introducing a form of selection bias." In any event, although the magnitude of the effects may differ somewhat from those reported in Table 4, the qualitative conclusions stated above hold. More precisely, individuals living in lone-parent families or in families whose main income earner has relatively little education, has a work limitation, is a member of a visible minority or is a post-1976 immigrant are more likely to experience low income for at least four years than are other people.

11 Since the individual is the unit of analysis, the study also averages the individual-specific income gap across all persons who lived in families with low income for at least one year.

12 The relative income gap is regressed on the following control variables: sex, age, educational attainment, student status, immigration status, visible minority status, work limitation status and family composition. This measure is used because it is more appropriate for between-group comparisons. Consider an unattached individual whose income is \$1,000 below his or her LICO and a family of six whose income is also \$1,000 below their LICO. The former will probably be worse off than the latter because his or her income gap represents a much higher proportion of his or her LICO. Thus, a better measure of the depth of low income is the relative income gap, that is, a percentage of a family's LICO.

13 Unattached individuals have a lower income gap (\$3,700) than persons living in families composed of couples with children (\$6,410) but a higher relative income gap, because the former have lower LICOs than the latter.

14 While this figure (30%) may seem inconsistent with the 11% of individuals who were in low income for at least three years between 1993 and 1998 (Table 2), this is not the case. The data refer to different populations. The 11% refers to the

entire Canadian population and the 30%, to the percentage of Canadians falling into low income in 1994 (who accounted for only 4% of the Canadian population [Morissette and Drolet, 2000: Table 9]).

15 Of all those who started a spell of low income between 1994 and 1996, some 10% to 17% had low income for two years.

16 See Morissette and Drolet (2000).

17 When based on cross-sections of the sample, the incidence of low income for persons aged 16 and over equals 10%, 11%, 11%, 11%, 10% and 10% for 1993 through 1998.

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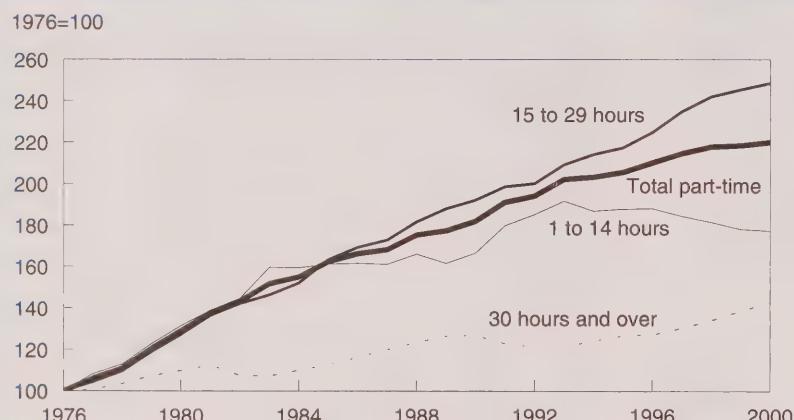
Trends in part-time work

Henry Pold

For more than two decades the ranks of part-time workers marched steadily onward and upward. Through good times and bad times, the proportion of workers whose usual hours at their main job amounted to less than 30 per week kept climbing (Chart). At the end of the 1990s, however, a plateau seemed to have been reached. In 1999, the seasonally adjusted December estimate of part-time employment actually dropped on a year-over-year basis, but then bounced back somewhat in December 2000. But numbers can conceal as much as they reveal. A closer look at the data shows different trends for short-hour (less than 15) and long-hour (15 to 29) part-time workers.

In 1976, about 13% of workers put in less than 30 hours per week at their main job. By 2000, this had climbed to 18%. The proportion of those working less than 15 hours was virtually unchanged over the period (5% and 6%). The proportion working 15 to 29 hours increased by about half, from less than 8% to more than 12%.

Chart: Since the early 1990s, the divergence in part-time employment has accelerated.



Source: Labour Force Survey

The overall levelling-off of part-time employment was entirely attributable to a decline among short-hour part-time workers. For those working 15 to 29 hours, the numbers continued their steady upward trend. The number of people working less than 15 hours per week peaked in 1993 and generally declined after 1996. The number working 15 to 29 hours increased every year between 1976 and 2000, more than doubling over the period.

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Business cycle effects

What lies behind the decline in the number of people working less than 15 hours per week? One factor appears to be the business cycle. While long-hour part-time work seems almost immune to it, short-hour part-time is somewhat susceptible. Following the recession of the early 1980s, short-hour part-time employment showed no growth until the end of the decade. And after the recession in the early 1990s, short-hour employment once again plateaued.

The precariousness of short-hour part-time jobs may reflect in part their temporary nature. For example, only 61% were permanent in 2000, compared with 77% of long-hour part-time jobs. Another indication of their vulnerability is the lower rate of unionization, 22% compared with 32% in 2000. (While the figures for job status and unionization are down slightly since 1997—when the data were first collected—it is too early to identify consistent trends.)

Table 1: Usual hours of work at main job, 2000

	Total	1 - 14	15 - 29	30 +
(1976 = 100)				
Both sexes	152.5	177.4	248.6	142.8
15 to 24	90.0	157.8	215.2	63.9
25 to 54	181.8	193.2	280.3	175.0
55 and over	135.9	227.2	222.5	122.4
Men	131.0	190.2	255.2	124.9
15 to 24	85.5	151.8	199.1	65.7
25 to 54	149.6	421.4	446.4	145.3
55 and over	116.8	249.0	224.2	107.7
Women	189.0	171.4	246.0	180.2
15 to 24	95.2	162.7	229.2	61.6
25 to 54	242.1	170.3	258.0	245.7
55 and over	180.2	215.0	221.6	165.7

Source: Labour Force Survey

Virtually all occupations and industries reflect trend

Between 1987 and 2000,¹ every major occupational group except primary occupations had the highest growth rates for persons working 15 to 29 hours per week (Table 2). The number of workers averaging 15 to 29 hours more than doubled among those in natural and applied sciences, and in government service and religion. In half of the 10 occupation groups, the second highest growth was among those working 30 or more hours, while in the other half the honour went to those working less than 15 hours per week.

In every industry but one, the greatest gains between 1987 and 2000 were found among those working 15 to 29 hours per week (Table 3). The lone exception was agriculture, where employment actually declined. The smallest drop in this industry was among those working the longest hours and the biggest was among

Changing legislation

Instead of resuming their growth toward the end of the 1990s, short-hour part-time jobs actually began to decline in 1997. Coincidentally, the rules for Employment Insurance (EI) premiums changed in January of that year. Prior to 1997, employers were not obliged to deduct EI premiums if an employee worked less than 15 hours in a week. And if no deduction was made, the employer did not have to pay its share, which is 1.4 times the employee deduction.

Only older men buck trend

Of the six age-sex groups examined here, only men 55 and older had a lower growth rate for long-hour part-time jobs than for short-hour ones (Table 1). Men 25 to 54 had by far the largest proportional increases in both types of part-time jobs—more than 300% each over the 25-year period.

Table 2: Employed by usual hours worked and occupation, 2000

	Usual hours at main job			
	Total	1 - 14	15 - 29	30 +
(1987 = 100)				
All occupations	121.0	110.0	143.8	119.0
Management	125.1	124.6	169.4	123.7
Business, finance and administrative	112.1	98.4	130.2	111.0
Natural and applied sciences and related	173.9	201.6	240.1	172.0
Health	130.0	116.9	135.5	129.3
Social science, education, government service and religion	140.4	137.9	213.5	133.2
Occupations in art, culture, recreation and sport	143.5	145.6	160.5	139.7
Sales and service	126.7	112.6	145.5	123.6
Trades, transport and equipment operators and related	105.9	107.9	143.2	104.4
Unique to primary industry	90.0	66.3	81.5	93.7
Unique to processing, manufacturing and related	115.8	83.7	127.7	116.0

Source: Labour Force Survey

Table 3: Employed by usual hours worked and industry, 2000

	Usual hours at main job			
	Total	1 - 14	15 - 29	30 +
	(1987 = 100)			
All industries	121.0	110.0	143.8	119.0
Goods	105.7	79.3	109.2	106.4
Agriculture	78.1	57.8	70.0	82.5
Forestry, fishing, mining, oil and gas	96.5	110.2	136.1	95.3
Utilities	97.9	--	188.2	97.4
Construction	111.6	119.3	145.9	109.8
Manufacturing	111.8	90.2	126.4	111.8
Durable	119.7	96.4	153.9	119.5
Non-durable	103.1	85.6	111.2	103.2
Services	127.5	115.0	147.8	125.4
Trade	116.6	96.1	131.3	116.0
Wholesale	131.7	134.0	149.4	130.8
Retail	112.6	93.9	130.1	110.7
Transportation and warehousing	122.1	108.9	158.1	119.9
Finance, insurance, real estate and leasing	114.7	97.7	148.0	112.4
Professional, scientific and technical	197.2	163.5	238.9	195.8
Management, administrative and other support	205.3	192.6	210.1	206.1
Education	123.6	136.1	175.5	115.4
Health care and social assistance	132.9	103.7	136.4	134.9
Information, culture and recreation	134.6	147.3	161.8	129.4
Accommodation and food	137.1	127.5	162.8	130.2
Public administration	99.0	79.7	118.5	98.8
Other	110.3	95.3	117.4	111.3

Source: Labour Force Survey

those working the shortest hours. Unlike the growth rates by occupation, the rates by industry were skewed to the longer end. Only five industries (of 18) had greater increases for short-hour part-time workers than for full-time.

Moonlighters affected

The decline in the number of people working less than 15 hours per week may also help to explain the levelling-off in the rate of multiple jobholding to around 5% in the latter part of the 1990s. It is much easier (and perhaps even necessary) to take on a second job when one

is working less than 15 hours per week than when one is putting in closer to 30 hours. The rate of multiple jobholding jumped from 2.1% in 1976 to a peak of 5.2% in 1997 and then eased to 4.8% in 2000.

Conclusion

In 1976, for every 10 people working short-hour part-time at their main job, 15 worked long-hour part-time. By 2000 the latter had increased to 20. As a result, the average usual hours worked by part-timers climbed from 15.5 per week in 1976 to 16.9 in 2000.

The continuing growth in the number of people working 15 to 29 hours may reflect the emergence of what could be termed career part-time jobs. Two factors may have contributed to this trend. More women (who have traditionally worked shorter hours) have entered (and stayed) in the labour force, so that most families today comprise dual-career spouses who must juggle family and work responsibilities. In addition, more part-time jobs now offer benefits once reserved for full-time employees.

What cannot easily be determined is the driving force behind the trend. The extent to which more people choose part-time work adds to the supply of such workers (Marshall, 2001). On the other hand, the evolving requirements of employers may also increase the demand for part-time workers.

Perspectives

Note

- 1 The Labour Force Survey changed its occupation and industry coding systems in 2000, and revisions were taken back only to 1987.

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Pension coverage and retirement savings

René Morissette and Marie Drolet

While several Canadian studies have documented the widening earnings differential between young workers and prime-age workers over the past two decades (Beach and Slotsve, 1996; Morissette, Myles and Picot 1994), few have connected it with the growing gap in pension coverage.

This article analyzes pension coverage over a 15-year period for men and women in different age groups. It uses data from the Longitudinal Administrative Databank, as well as from the Survey of Union Membership, the Labour Market Activity Survey and the Survey of Labour and Income Dynamics (see *Data sources and concepts*).

While changes in pension coverage provide useful information on movements in the incidence of pensions, they are silent on the extent to which workers prepare themselves for retirement. Reduced individual retirement savings may lead to less income for future generations. One way to address this

issue is to examine how individual contributions to tax-assisted retirement savings programs have evolved over time. This is the second goal of the article, which documents the evolution of registered pension plan (RPP) and registered retirement savings plan (RRSP) contributions of men and women of different age groups.

RPP coverage: 1984 to 1998

Between 1984 and 1998, RPP coverage declined for three of the four age-sex groups (Table 1). Pension coverage among young men fell from 54% to 44%. A more moderate yet substantial decline was observed for prime-age men: the proportion covered by an RPP dropped from 69% to 62%.⁴ Young women's coverage

Table 1: Pension coverage of men and women

	Employees covered by a pension plan*					Taxfilers with contributions to an RPP**				
	Men		Women		%	Men		Women		%
	25-34	35-54	25-34	35-54		25-34	35-54	25-34	35-54	
1984	54.2	69.3	46.7	45.7		...	...	...	...	...
1986	50.4	67.2	42.9	46.4	26.2	37.8	27.6	31.9		
1987	49.6	67.6	43.1	46.8	25.6	37.0	27.3	32.3		
1988	50.9	67.5	43.0	49.6	25.5	37.0	27.7	33.8		
1989	51.7	68.9	43.2	50.8	24.7	36.2	27.3	34.3		
1990	49.1	69.2	44.8	50.5	24.5	36.1	27.7	35.0		
1991	...	...	...	...	24.1	35.7	27.7	35.7		
1992	...	...	...	...	23.8	35.5	28.2	36.5		
1993	46.9	68.7	46.3	54.2	23.2	35.3	27.9	36.8		
1994	49.2	71.0	44.3	55.8	22.1	34.4	27.0	36.6		
1995	45.4	67.2	42.7	53.9	21.2	33.8	26.2	36.5		
1996	43.9	63.2	40.9	51.9	20.3	32.9	25.1	36.0		
1997	42.6	62.5	40.4	50.7	19.7	32.2	24.0	35.0		
1998	43.6	62.4	38.7	50.8						
Change (%)										
1986-1997	-15.5	-7.0	-5.8	9.3	-24.8	-14.8	-13.0	9.7		
1993-1997	-9.2	-9.0	-12.7	-6.5	-15.1	-8.8	-14.0	-4.9		

Sources: Survey of Union Membership; Labour Market Activity Survey; Survey of Labour and Income Dynamics; Longitudinal Administrative Databank

* Main job in December.

** Taxfilers with annual earnings (wages and salaries plus net income from self-employment) of at least \$1,000 (1994 dollars).

remained relatively stable between 1984 and 1993, then decreased from 46% in 1993 to 39% in 1998. In contrast, women 35 to 54 experienced an increase in coverage during the period. It was 46% in 1984, peaked at 56% in 1994 and stood at 51% in 1998.

Between 1991 and 1997, the percentage of workers participating in an RPP fell 5 percentage points among young men, 5 points among prime-age men and 3 points among young women. In contrast, it was virtually unchanged among prime-age women (Table 2). After the mid-1980s, then, RPP coverage fell among men and young women and rose among prime-age women.⁵

Table 2: Taxfilers with pension coverage, 1991-1997*

	Men		Women	
	25-34	35-54	25-34	35-54
%				
1991	35.7	49.8	34.3	41.6
1992	35.3	49.7	35.1	42.9
1993	34.0	48.9	34.9	43.5
1994	32.2	47.4	33.6	42.9
1995	31.7	47.2	33.1	43.3
1996	30.8	46.2	31.9	42.9
1997	30.3	45.2	31.7	42.8
Change (%)				
1991-1997	-15.1	-9.2	-7.6	2.9
1993-1997	-10.9	-7.6	-9.2	-1.6

Source: Longitudinal Administrative Databank (LAD)

* Taxfilers with annual earnings (wages and salaries plus net income from self-employment) of at least \$1,000 (1994 dollars) and a positive pension adjustment.

At least two factors may explain the drop in men's coverage. First, the unionization rate fell during the period: from 39% to 26% for young men and from 48% to 41% for prime-age men (Table 3). Since men's coverage rates are much higher in unionized jobs than they are in non-unionized jobs (Table 4), the decrease in the unionization rate is likely to have lowered their coverage rate. Second, employment has shifted away from high-coverage industries to low-coverage industries.⁶ The decline in the unionization rate should have a more limited impact among prime-age men because it is less pronounced and the union/non-union differential in pension coverage is, in relative terms, lower among prime-age men than among young men.

The decline in union density (from 34% to 28%) and inter-sectoral shifts of employment also likely played a role in the drop of young women's coverage, but less so for prime-age women. Union density dropped only marginally for prime-age women and could not have exerted significant downward pressure on their coverage rate. Industrial shifts probably also played a minor role, since they involved industrial groups with fairly similar coverage rates. In contrast, occupational shifts toward professional/managerial and natural/social sciences-related positions and away from clerical, services-related and primary/process-related occupations may explain part of the increase in coverage for prime-age women.

Retirement savings: 1986 to 1997

While changes in pension coverage provide useful information on an important component of workers' total compensation, they cannot reveal the extent to which workers prepare themselves for retirement. One way to address this issue is to examine contributions to tax-assisted retirement savings programs. This is done here using data from the LAD to document the evolution of workers' contributions to the two major tax-assisted retirement savings programs—RPPs and RRSPs—from 1986 to 1997.

Between 1986 and 1997, average contributions to RPPs fell substantially among young and prime-age men and dropped slightly among young women (Table 5). Among prime-age women, average RPP contributions rose. RRSP contributions grew dramatically (by at least 70%) for each of the four age-sex groups. For all three groups that experienced a drop in RPP coverage, the growth in RRSP contributions offset any decline in average RPP contributions. As a result, the sum of RPP and RRSP contributions rose substantially. Prime-age women also increased their RRSP contributions markedly during the period. Combined with the growth in their RPP contributions, this produced about a 70% increase in the sum of both.

These averages, however, mask considerable heterogeneity among workers in different income quintiles. For example, between 1986 and 1997, contributions to RPPs and RRSPs made by workers in the top quintile were 9 to 46 times greater than those made by workers in the bottom quintile (Table 6). Contributions by the latter never exceeded \$200 per year for young men and women or \$630 per year for

Table 3: Characteristics of employees

	Men				Women			
	25 - 34		35 - 54		25 - 34		35 - 54	
	1986	1997	1986	1997	1986	1997	1986	1997
%								
Union status								
Unionized	38.6	25.6	47.9	41.1	34.0	28.0	37.6	36.9
Non-unionized	61.4	74.4	52.1	58.9	66.0	72.0	62.4	63.1
Industry								
Agriculture and fishing	1.5	--	0.8	1.6	0.9	--	1.0	1.1
Forestry and mining	4.5	3.2	4.2	3.3	0.9	--	0.6	--
Construction	6.8	9.8	6.9	6.9	1.1	--	1.1	1.1
Manufacturing	25.9	24.9	26.3	24.6	12.6	12.3	13.7	10.0
Distributive services	20.3	15.0	17.9	19.7	8.5	7.7	7.5	8.7
Business services	8.6	12.2	7.5	9.8	16.7	16.7	11.4	14.3
Consumer services	17.1	20.0	10.9	13.6	22.9	28.1	21.8	21.6
Public services	15.4	13.5	25.6	20.5	36.4	32.5	42.9	42.4
Occupation								
Professional and managerial	13.4	11.7	18.9	18.2	11.9	15.3	11.1	15.6
Natural and social science	13.6	15.2	15.4	14.7	23.5	24.7	24.7	26.5
Clerical	7.1	6.7	5.7	5.2	34.6	23.6	30.4	28.3
Sales	8.0	7.8	5.8	6.4	7.0	9.0	7.9	7.6
Service	7.6	9.7	8.5	8.9	11.5	16.0	13.8	11.4
Primary and processing	26.4	26.3	24.3	25.1	6.8	6.5	8.6	6.0
Construction	8.7	9.5	8.8	8.0	0.2	--	0.2	--
Other	15.3	13.1	12.6	13.6	4.4	4.6	3.1	4.5
Education								
Less than university	82.2	78.5	78.8	78.0	81.4	74.3	84.6	79.1
University degree	17.8	21.5	21.2	22.0	18.6	25.7	15.4	20.9
Status								
Full-time	95.8	92.6	97.6	96.1	77.9	75.5	74.3	75.1
Part-time	4.2	7.4	2.4	3.9	22.1	24.5	25.7	24.9
Average hourly wages	\$							
(1986 dollars)	12.27	12.09	15.33	15.16	10.11	10.19	10.69	11.56

Sources: *Labour Market Activity Survey, 1986; Survey of Labour and Income Dynamics, 1997*

workers in the top quintile, ranging from \$1,700 for young women to \$2,300 for prime-age men.

In sum, even though Canadian workers appeared to prepare themselves for retirement better in the late 1990s than they had in the mid-1980s, the extent to which they did so differed markedly between low earners and high earners. While low earners increased their contributions to the two major tax-assisted retirement savings programs during the period, the amounts were still very small.

Factors affecting coverage

Movements in the industrial and occupational structure of employment, as well as changes in union density, are important determinants of the changes in pension coverage rates. Specifically, the decline in unionization and employment shifts toward low-coverage industries explain most of the decline in pension coverage among men and young women (Morissette and Drolet, 2001).

Several other explanations for the decreases in RPP coverage can be put forward. First, increases in competition—from abroad or within industries—may induce firms to cut labour costs by terminating some pension plans. New firms entering a market may delay offering plans in order to maximize their chances of survival during their first few years.

Second, increases in employers' contributions to various programs, such as the Canada or Quebec Pension Plan (C/QPP) or Employment Insurance, may lead new firms not to offer an RPP or may induce existing firms to terminate a plan (Frenken, 1996).

prime-age men and women.⁷ In contrast, contributions made by workers in the top quintile were substantial, between \$2,900 and \$5,800 per year during the period, depending on the age-sex group.

For all demographic groups and quintiles, real contributions to RPPs and RRSPs (measured both in

absolute terms and as a percentage of annual earnings) grew between 1986 and 1997. In absolute terms, however, the increase was negligible among workers in the bottom quintile: it varied from \$60 for young women to \$170 for prime-age women. On the other hand, the increase was substantial among

Data sources and concepts

Two sources of data allow the calculation of pension coverage by age in Canada: the Longitudinal Administrative Databank (LAD) and a combination of specific household surveys.¹ The LAD file, based on T1 tax records, provides two measures: the percentage of taxfilers who participate in a contributory registered pension plan (RPP) and the percentage who participate in any RPP. The first is available for 1986 to 1997, while the second covers only 1991 to 1997. While the LAD has age and sex information, it contains very few covariates that can be used to explain the evolution of coverage rates over time. For instance, it contains no information on workers' union status, education, industry of employment or occupation.

To explain the evolution of pension coverage for different age groups, it is necessary to use surveys that collect data on pension plan coverage, worker attributes and job characteristics. The 1984 Survey of Union Membership (SUM), the 1986 to 1990 Labour Market Activity Surveys (LMAS) and the Survey of Labour and Income Dynamics (SLID), launched in 1993, all satisfy this requirement. These household surveys are all based on the Labour Force Survey sample design and measure pension plan coverage by asking employees:

"Are you covered by a pension plan connected with this job (do not count, CPP/QPP, deferred profit sharing plans or personal savings plans for retirement)?"

Although the wording of the question is exactly the same across all surveys, two important caveats are necessary. First, respondents may answer that they are *covered* by a plan in their job even though they are not *members* of (that is, do not participate in) the plan. This could happen when participation in a plan is voluntary. Under this scenario, the survey question would measure the percentage of workers who are *offered* a plan, regardless of whether they are plan members.

By definition, workers who are offered a plan include workers in compulsory plans, workers who choose to participate in voluntary plans, and workers who reject participation in voluntary plans. The measure of pension coverage may include some workers in the third group yet there is no information in SUM-LMAS-SLID that distinguishes them from the first two groups. However, this distinction is not important when looking at *changes* in coverage over time. Since most RPPs are compulsory and do not offer workers the option not to participate,² most of the changes in the percentage being offered a plan will likely reflect changes in

the percentage of workers who are members of compulsory plans rather than changes in the percentage of workers who are offered voluntary plans.

A second issue is related to group RRSPs (registered retirement savings plans). Some respondents may consider group RRSPs to be registered pension plans, while others may correctly report that they are not covered by a RPP. In this case, the question would capture both employees covered by an RPP and part of those covered by group RRSPs. As a result, part of the changes in the measure of pension coverage derived from SUM-LMAS-SLID could reflect changes in the incidence of workers who are members of group RRSPs. However, the tax data provide compelling evidence that the percentage of workers *participating* in RPPs has declined among men and young women and has risen among prime-age women since the mid-1980s. The same trends are observed in SUM-LMAS-SLID.

Assuming that the measurement of pension coverage obtained from SUM-LMAS-SLID includes only workers who are RPP members, then part of the observed decline in RPP coverage may be offset by the potential growth in group RRSP membership, for which no data currently exist. If so, the decline in RPP coverage does not necessarily imply a decline in workers' total compensation. Conversely, if the measurement of pension coverage obtained from SUM-LMAS-SLID includes *all* members of group RRSPs as well as members of RPPs, then the decline in pension coverage observed in the survey data necessarily implies a decline in total compensation. In any event, the results suggest that, unless the decline in RPP coverage is *totally* offset by the growth in group RRSPs (with equivalent employer contributions), many workers may have to accept jobs providing lower fringe benefits than at the beginning of the 1980s.

The analysis focuses on two age groups: 25 to 34 (young workers) and 35 to 54 (prime-age workers). Workers under 25 are excluded, since potential changes in their coverage will probably have little effect on their retirement income, given the high probability of future job changes. Likewise, those over 54 are omitted because many may benefit from early retirement provisions and those still working may not be representative of the whole group.

LMAS and SLID allow measurement of pension coverage in *all* jobs held by employees. In contrast, SUM measures pension coverage only for the *main* job held in December.³ Hence, the sample selected consists of employees 25 to 54 in their main job in December.

Table 4: Pension coverage of young and prime-age employees

	Men				Women			
	25 - 34		35 - 54		25 - 34		35 - 54	
	1986	1997	1986	1997	1986	1997	1986	1997
%								
Total	50.4	42.6	67.2	62.5	42.9	40.4	46.4	50.7
Union status								
Unionized	78.1	78.4	84.7	89.8	71.7	80.0	76.4	84.9
Non-unionized	33.0	30.3	51.2	43.4	28.1	25.0	28.4	30.8
Industry								
Agriculture and fishing	8.0	--	--	--	--	--	--	--
Forestry and mining	63.6	--	69.3	64.8	--	--	--	--
Construction	31.9	29.7	41.7	46.7	--	--	--	--
Manufacturing	54.8	50.2	71.1	66.0	35.7	40.2	41.6	43.7
Distributive services	60.8	53.0	68.6	62.4	53.7	50.3	53.0	50.8
Business services	37.0	33.2	59.2	54.2	42.6	46.6	39.9	45.0
Consumer services	27.1	23.9	35.9	31.4	20.7	14.4	16.8	21.8
Public services	71.2	65.9	86.2	90.2	58.1	58.9	65.1	70.9
Occupation								
Professional and managerial	49.8	44.1	73.7	61.6	49.5	53.4	56.8	58.9
Natural and social science	59.9	51.1	80.5	79.2	56.4	57.3	67.0	71.3
Clerical	62.4	46.7	79.3	72.7	46.0	39.8	48.5	49.1
Sales	33.6	32.2	39.5	39.5	26.7	20.6	19.0	33.2
Service	45.6	41.4	62.0	62.9	19.6	19.0	25.4	24.1
Primary and processing	50.4	39.1	64.6	60.9	26.9	33.1	27.7	29.4
Construction	48.8	36.0	58.9	59.6	--	--	--	20.2
Other	48.9	48.5	63.0	56.8	40.0	--	--	--
Education								
Less than university	49.4	40.9	64.1	59.8	39.8	35.9	42.6	45.8
University degree	54.9	48.9	78.9	72.1	56.6	53.3	67.1	69.2
Status								
Full-time	51.9	44.8	68.2	64.0	49.3	45.5	54.7	57.9
Part-time	16.1	15.7	27.5	24.7	20.4	24.6	22.5	28.9

Sources: Labour Market Activity Survey, 1986; Survey of Labour and Income Dynamics, 1997

increases in competitive pressures, which could induce employers to be more antithetical toward unions. Thus, increases in competition, which could in turn originate from technological changes, could be a major factor behind the decline in coverage observed among three demographic groups.

Job quality for young men

These results raise some concern about job quality for young men. Some studies have documented a decline in real annual earnings of young men during the 1980s (Morissette, Myles and Picot, 1994; Beach and Slotsve 1996).⁹

Unless the decline in young men's pension coverage is totally offset by the growth in group RRSPs (with equivalent employer contributions), the drop in their total compensation is underestimated.

Second, unless the trends regarding unionization and industrial shifts reverse, and unless the growth in group RRSPs offsets the decrease in RPP coverage, new cohorts of young men may have to accept jobs providing lower fringe benefits than those offered previous cohorts.

Recent work has shown that young men experienced a downward shift in their age-earnings profile during the 1980s (Beaudry and Green, 1996). The current study raises a related question: will the drop in RPP coverage observed among young men have long-term effects, that is, affect their retirement income?

The dramatic growth in RRSP contributions among young men has offset any decline of their RPP contributions. The extent to which they prepare themselves for retirement—as measured by their

Third, any increase in administrative costs (for example, an increase in hourly fees for actuarial services in defined-benefit plans) could reduce firms' incentives to provide RPPs and lead them either to move to a group RRSP or to offer no retirement plan at all. Last, the legislative changes introduced during the 1980s and early 1990s

regarding vesting, locking-in and cost-sharing may have increased the costs of providing pension plans, dissuading some new employers from offering RPPs or inducing established employers to terminate plans.⁸

The decline in unionization may not be purely external. It could be caused—at least in part—by

contributions to RPPs and RRSPs—appears to have improved over the 15 years. While these calculations do not take into account the impact of the loss of employer RPP contributions (resulting from the decline in pension coverage) on young workers' retirement income, they provide some evidence that young men's contributions to RRSPs have evolved to increase their retirement income (abstracting from any future changes to C/QPP programs).

Table 5: RPP and RRSP contributions

	25-34		35-54	
	RPP	RRSP	RPP	RRSP
\$				
Men				
1986	430	670	890	1,500
1987	410	560	850	1,500
1988	400	710	850	1,500
1989	380	700	830	1,400
1990	380	690	840	1,300
1991	380	800	830	1,700
1992	390	870	850	1,800
1993	370	1,000	830	2,000
1994	350	1,100	810	2,200
1995	330	1,300	780	2,400
1996	310	1,600	750	2,600
1997	300	1,600	710	2,600
Women				
1986	350	460	520	860
1987	340	380	530	900
1988	340	480	540	950
1989	330	470	540	910
1990	350	470	580	880
1991	350	540	610	1,000
1992	370	600	650	1,100
1993	380	730	670	1,300
1994	360	820	680	1,400
1995	340	930	660	1,500
1996	330	1,100	640	1,700
1997	310	1,100	620	1,700

Source: Longitudinal Administrative Databank

Notes: Taxfilers with annual earnings (wages and salaries plus net income from self-employment) of at least \$1,000 (1994 dollars). Contributions below \$1,000 are rounded to the nearest \$10, those above are rounded to the nearest \$100. The denominator used to calculate the average consists of all workers in a given age-sex group, rather than only workers who have made contributions. The average captures changes in both the percentage of members and the contributions of those who contribute.

This conclusion must be put into perspective, since it does not apply to all young men. Contributions to RPPs and RRSPs made by young men in the bottom quintile are extremely small and, in absolute terms, barely rose over the period. This suggests that increases in future retirement income may be marginal or non-existent for this group.

Conclusion

Decreases in RPP benefits do not necessarily imply that workers are worse off. Some substitution may take place between direct and indirect payroll benefits. Also, even though pension coverage of young women fell between 1986 and 1997, real annual earnings of young women working full year full time rose by 5% during the period.¹⁰ However, decreases in RPP benefits of young men and prime-age men suggest that they are worse off, because—ignoring any potential effect of group RRSPs—the decline in their RPP coverage between 1986 and 1997 took place during a period of flat or declining (real) earnings.¹¹

Canadian workers appear to have prepared themselves for retirement better in the late 1990s than did their counterparts in the mid-1980s. This must be put into context, however. The increase in RRSP contributions may not represent a net increase in savings. It is unclear whether tax-assisted retirement savings programs (such as RPPs and RRSPs) encourage new savings or simply induce a shift of savings from one vehicle to another (Gale, 1998).

The growth in pension coverage observed among prime-age women must be interpreted with caution, since it was not steady between 1986 and 1997. Both survey data and tax data indicate that coverage rose between 1986 and 1993, but fell between 1993 and 1997. These trends are consistent with pension plan data, which show that pension coverage among women rose from 36% to 42% between 1987 and 1993 and then fell to 40% in 1997 (Statistics Canada, 1999). A recent decline in coverage among prime-age women may signal further declines for this group.

Part of the changes in pension coverage measured in the survey data could reflect changes in the incidence of workers who are members of group RRSPs. Unless the decline in RPP coverage is *totally* offset by the growth in group RRSPs (with equivalent employer contributions), many Canadian workers may have to accept jobs providing lower fringe benefits than those received by their counterparts at the beginning of the 1980s.

Table 6: Average contributions to RPPs and RRSPs, by earnings quintile*

\$ contribution (% of earnings)													Change 1986-1997	
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total	Due to RRSP
Men 25-34														
Lowest	100	70	120	110	100	120	130	140	140	160	180	170	70	100.0
	(1.4)	(1.0)	(1.5)	(1.3)	(1.2)	(2.1)	(2.2)	(2.5)	(2.3)	(2.6)	(2.9)	(2.7)		
Middle	800	690	830	810	800	800	820	880	980	1,100	1,300	1,200	400	150.0
	(2.7)	(2.3)	(2.8)	(2.7)	(2.8)	(2.9)	(3.0)	(3.3)	(3.7)	(4.2)	(4.9)	(4.6)		
Highest	2,800	2,500	2,700	2,600	2,600	3,000	3,300	3,700	3,900	4,400	4,800	5,000	2,200	113.6
	(4.7)	(4.2)	(4.5)	(4.4)	(4.4)	(5.3)	(5.6)	(6.4)	(6.7)	(7.5)	(8.3)	(8.3)		
Men 35-54														
Lowest	450	490	520	440	380	460	440	490	530	570	630	610	160	100.0
	(4.9)	(5.3)	(5.3)	(4.1)	(3.7)	(6.2)	(5.8)	(6.9)	(6.8)	(7.5)	(8.5)	(7.6)		
Middle	2,100	2,100	2,200	2,200	2,100	2,100	2,300	2,400	2,500	2,700	2,900	2,900	800	112.5
	(5.4)	(5.3)	(5.5)	(5.5)	(5.5)	(5.8)	(6.2)	(6.6)	(6.8)	(7.4)	(8.1)	(8.1)		
Highest	5,000	4,900	4,900	4,500	4,300	5,500	5,900	6,400	6,600	7,000	7,300	7,300	2,300	121.7
	(6.3)	(6.2)	(6.0)	(5.4)	(5.3)	(7.0)	(7.3)	(8.0)	(8.2)	(8.6)	(9.0)	(8.8)		
Women 25-34														
Lowest	60	60	70	50	50	80	90	100	100	120	130	120	60	100.0
	(1.8)	(1.7)	(1.9)	(1.3)	(1.1)	(2.0)	(2.3)	(2.9)	(2.8)	(3.2)	(3.5)	(3.1)		
Middle	490	430	500	510	510	540	590	650	720	810	880	850	360	102.8
	(2.7)	(2.3)	(2.7)	(2.7)	(2.7)	(2.9)	(3.1)	(3.5)	(3.9)	(4.4)	(4.8)	(4.6)		
Highest	2,300	2,000	2,300	2,200	2,300	2,600	2,800	3,200	3,400	3,600	4,000	4,000	1,700	111.8
	(5.5)	(4.9)	(5.5)	(5.3)	(5.4)	(6.0)	(6.4)	(7.3)	(7.7)	(8.2)	(9.2)	(9.1)		
Women 35-54														
Lowest	190	190	210	160	160	210	220	280	310	320	360	360	170	100.0
	(5.5)	(5.6)	(5.5)	(3.7)	(3.3)	(5.3)	(5.3)	(6.4)	(7.1)	(7.3)	(8.3)	(8.5)		
Middle	1,000	1,000	1,100	1,100	1,100	1,200	1,300	1,400	1,500	1,600	1,800	1,800	800	76.3
	(5.1)	(5.1)	(5.5)	(5.4)	(5.3)	(5.4)	(5.7)	(6.4)	(6.6)	(7.3)	(7.8)	(7.9)		
Highest	3,500	3,600	3,600	3,500	3,500	4,200	4,500	4,900	5,100	5,300	5,700	5,700	2,200	95.5
	(7.4)	(7.5)	(7.5)	(7.2)	(7.1)	(8.2)	(8.5)	(9.3)	(9.6)	(10.0)	(10.8)	(10.6)		

Source: Longitudinal Administrative Databank

* Taxfilers with annual earnings (wages and salaries plus net income from self-employment) of at least \$1,000 (1994 dollars).

Finally, the trends observed at the individual level may be different from those at the family level. For instance, the substantial drop in pension coverage of young men could be partly offset by the growth in labour market participation of spouses in today's young dual-earner couples—a question for future research.

Perspectives

Notes

- 1 The Pension Plans in Canada (PPIC) database has data on RPP coverage by sex but not by age.
- 2 PPIC data indicate that members of compulsory plans represented roughly 90% of all RPP members between 1985 and 1994 (Special tabulations from the Pensions Section of Statistics Canada).

3 The main job is the one with the greatest number of usual weekly hours.

4 The drop in pension coverage of young men and prime-age men is consistent with PPIC data, which show that the percentage of men who are members of RPPs has fallen from 48% in 1987 to 42% in 1997.

5 The percentages shown in Table 2 are smaller than those shown in columns 1-4 of Table 1. This is mainly because the denominator used in the calculation of these percentages (the number of tax filers with annual earnings of at least \$1,000 in 1994 dollars, in the tax data, and the number of employees in December in their main job, in SLID) is greater in the tax data than it is in SLID.

6 Employment of young men has shifted away from distributive services (-5 percentage points) and public services (-2 points) toward business services (+4 points), consumer services (+3 points) and construction (+3 points). Employment of prime-age men has moved away from public services (-5 percentage points) and manufacturing (-2 points) toward consumer services (+3 points), business services (+2 points) and distributive services (+2 points).

7 One reason why individuals with low earnings contribute little to their RRSPs is that their contribution may offer very little, if any, tax savings (Frenken, 1997).

8 See Appendix 1 in Morissette and Drolet (2000) for details on these legislative changes.

9 Between 1975 and 1986, real annual earnings of men 25-34 employed full year full time dropped 6.5%. Between 1986 and 1997, they fell an additional 2.5% (Authors' calculations from the Survey of Consumer Finances).

10 Authors' calculations from the Survey of Consumer Finances.

11 Real annual earnings of prime-age men employed full year full time dropped 1% between 1986 and 1997.

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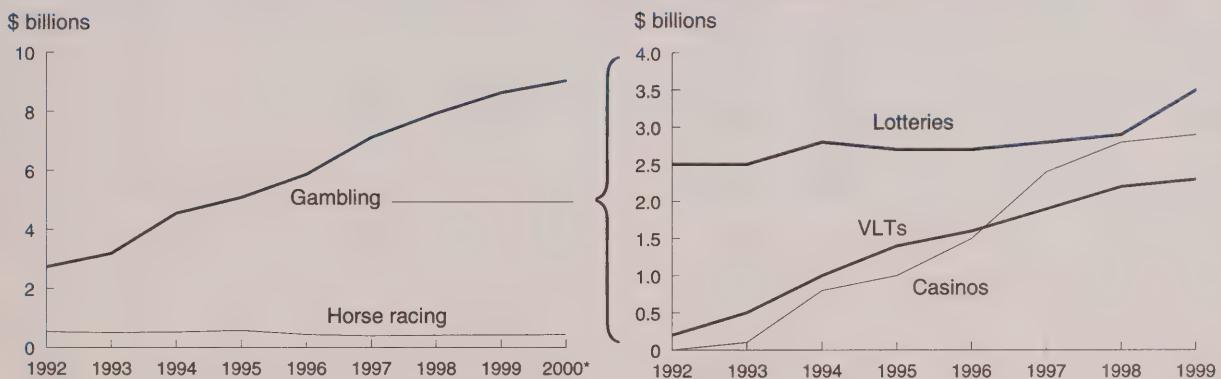
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Fact-sheet on gambling

Katherine Marshall

- Net revenue from government-run lotteries, video lottery terminals (VLTs) and casinos rose from \$2.7 billion in 1992 to \$9.0 billion in 2000 (preliminary data).¹
- Net revenue from pari mutuel betting (horse racing) dropped from \$530 million to \$430 million over the same period (1992 to 2000).
- In 1999, lotteries accounted for 40% of all net non-charity gambling revenue, casinos 33%, and VLTs 27%.
- After several years of flat revenue generation, lotteries broke the \$3 billion mark in 1999, jumping from \$2.9 billion in 1998 to \$3.5 billion in 1999.

Net revenue from government-run gambling



Source: National Accounts

* Preliminary data.

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- Of the \$8.6 billion generated from government-run gambling in 1999, \$5.0 billion was profit.
- Average gambling expenditure per person 18 and over in 1999 ranged from \$90 in the two Territories to \$488 in Manitoba, with a national average of \$370.²

Provincial gambling revenues, profits and expenditures

	Gambling revenue*			Gambling profit**			Annual gambling expenditure per capita†	
	1992	1999	Increase	1992	1999	Increase	1992	1999
	\$ millions (current)			\$ millions (current)			\$ (current)	
Canada	2,734	8,632	216	1,680	4,987	197	130	370
Newfoundland	80	160	100	42	93	121	190	382
Prince Edward Island	20	26	33	7	12	71	205	251
Nova Scotia	125	313	151	72	137	90	180	430
New Brunswick	117	187	61	49	90	84	210	320
Quebec	693	2,464	256	472	1,316	179	130	430
Ontario	853	3,250	281	529	1,546	192	105	370
Manitoba	153	416	173	105	249	137	185	488
Saskatchewan	62	319	415	39	221	467	85	423
Alberta	225	953	323	125	807	546	120	434
British Columbia	403	539	34	239	512	114	155	172
Yukon and Northwest Territories	5	6	20	1	4	300	80	90

Sources: National Accounts; Public Institutions (Financial management statistics); and post-censal population estimates

* Total money wagered on non-charity lotteries, casinos and VLTs, minus prizes and winnings (see Data sources and definitions).

** Net income of provincial and territorial governments from total gambling revenue, less operating and other expenses.

† Persons 18 and over, as this is the legal age for gambling in most provinces.

- Compared with workers in non-gambling industries, those in gambling were more likely to be women (56% versus 46%), under 35 (53% versus 38%), paid by the hour (81% versus 62%), and paid less (\$14 hourly versus \$17).
- Employment in the gambling industry has risen from 12,000 in 1992 to 42,000 in 2000.

Characteristics of workers

	Gambling		Non-gambling	
	1992	2000	1992	2000
'000				
Total employed	12	42	12,830	14,868
Sex			%	
Men	35	44	55	54
Women	65	56	45	46
Age				
15 to 34	57	53	45	38
35 and over	43	47	55	62
Education				
High school graduation or less*	66	55	57	48
Postsecondary certificate or diploma	21	36	27	32
University degree	13	9	16	20
Work status				
Full-time	59	80	82	82
Part-time	41	20	18	18
Province				
Atlantic provinces	8	4	7	7
Quebec	9	14	24	23
Ontario	28	49	39	39
Prairie provinces	30	18	17	18
British Columbia	25	14	13	13
Class of worker				
Employee	98	96	85	84
Self-employed	--	4	15	16

Source: Labour Force Survey

* May include some uncompleted postsecondary.

Gambling outpaced other industries.



Sources: Labour Force Survey; National Accounts

* The price, at factor cost, of the goods and services produced. The GDP figures for the gambling industry refer strictly to wagering activities, such as lottery ticket sales, VLT receipt sales and bets at casinos. Other economic spinoffs, such as hotel and restaurant business, security services, or building and equipment maintenance, are not included.

Characteristics of jobs

	Gambling		Non-gambling	
	1997	2000	1997	2000
'000				
Employees*	34	40	11,419	12,448
Union status			%	
Unionized**	30	33	34	32
Non-union/nonunionized	70	67	66	68
Job status				
Permanent	91	92	89	87
Temporary	9	8	11	13
Usually receive tips				
Yes	27	24	7	7
No	73	76	93	93
Paid by the hour				
Yes	80	81	61	62
No	20	19	39	38
Average hourly earnings†			\$	
Men: full-time	13.58	15.72	17.83	19.20
Women: full-time	13.06	13.62	14.77	15.73

Source: Labour Force Survey

* More detailed questions on employees were introduced with the 1997 revision of the Labour Force Survey.

** Includes persons who are not union members, but whose jobs are covered by collective agreements.

† Includes tips and commissions.

- Although one in seven women and men living alone reported spending money on casinos, slot machines or VLTs, men spent more than three times as much as women, \$700 compared with \$200.³
- Gambling participation and expenditure rates increased with household income. For example, 64% of households with incomes of less than \$20,000 gambled in 1999 and spent an average of \$333, while equivalent figures for those with incomes of \$80,000 or more were 80% and \$776.

Household expenditures on gambling activities

	At least one gambling activity		Government lotteries		Other lotteries/raffles, etc.		Casinos, slot machines and VLTs		Bingos	
	\$	%	\$	%	\$	%	\$	%	\$	%
All households										
1998	464	77	253	67	82	34	438	20	707	10
1999	499	76	246	67	76	32	631	20	655	10
One-person households*	350	66	192	57	64	22	459	15	536	7
Men	421	69	242	61	83	22	709	16	364	3
18 to 44	374	69	184	60	65	23	650	20	--	--
45 to 64	508	74	297	68	76	24	923	15	--	--
65 and over	380	60	281	54	155	16	428	8	--	--
Women	283	63	142	54	47	21	208	14	573	11
18 to 44	165	63	114	52	48	28	143	18	105	7
45 to 64	254	70	139	64	34	20	203	13	593	9
65 and over	346	60	155	49	54	19	244	12	655	14
All households										
Newfoundland	477	75	254	61	99	44	360	12	528	22
Prince Edward Island	--	74	291	55	99	46	--	11	1,177	19
Nova Scotia	580	79	249	64	50	48	567	22	958	15
New Brunswick	431	74	218	63	56	41	292	12	741	17
Quebec	450	81	267	76	52	18	633	18	433	9
Ontario	493	74	241	65	79	32	574	21	638	10
Manitoba	673	77	232	63	73	45	771	29	802	15
Saskatchewan	494	79	227	61	90	56	488	29	476	13
Alberta	597	73	228	60	103	44	844	20	932	9
British Columbia	480	73	236	66	67	32	691	17	777	6
Income										
Less than \$20,000	333	64	173	55	50	17	414	11	562	11
\$20,000 to 39,999	478	77	242	68	66	28	629	18	580	12
\$40,000 to 59,999	519	81	274	72	80	39	540	23	739	9
\$60,000 to 79,999	547	86	300	75	83	46	483	29	873	8
\$80,000 and over	776	80	245	68	101	45	1,221	29	936	6

Source: Survey of Household Spending

Note: Expenditures are per spending household. Unless otherwise indicated, figures are for 1999.

* Using one-person households allows examination of individual characteristics. Persons 18 and over were selected as this is the legal age for gambling in most provinces.

Data sources and definitions

Labour Force Survey: a monthly household survey that collects information on labour market activity, including detailed occupational and industrial classifications, from all persons 15 years and over.

National Accounts: The quarterly Income and Expenditure Accounts (IEA) is one of several programs constituting the System of National Accounts. The IEA produces detailed annual and quarterly income and expenditure accounts for all sectors of the Canadian economy, namely households, businesses, governments and non-residents.

Survey of Household Spending: an annual survey that began in 1997 and replaced the Family Expenditure Survey and the Household Facilities and Equipment Survey. It collects data on expenditures, income, household facilities and equipment, and other characteristics of families and individuals living in private households.

Gambling industries: This industry group covers establishments primarily engaged in operating gambling facilities, such as casinos, bingo halls and video gaming terminals; or providing gambling services, such as lotteries and off-track betting. It excludes horse race tracks and hotels, bars and restaurants that have casinos or gambling machines on the premises.

Gambling profit: net income from provincial and territorial government-run lotteries, casinos and VLTs, after deducting prizes and winnings, operating expenses (including wages and salaries), payments to the federal government and other overhead costs.

Gambling revenue: all money wagered on provincial and territorial government-run lotteries, casinos and VLTs, less prizes and winnings. Gambling revenue generated by and for charities and on Indian reserves is excluded.

Government casino: a government-regulated commercial casino. Permits, licences and regulations for casinos, both charity and government, vary by province. Government casinos, now permitted in several provinces, also vary by the degree of public and private involvement in their operations and management. Some government casinos are run entirely as crown corporations, while others contract some operations—for example, maintenance, management and/or services—to the private sector.

Video lottery terminal (VLT): a coin-operated, free-standing electronic game of chance. Winnings are paid out through receipts that are turned in for cash, as opposed to cash payments from slot machines. Such terminals are regulated by provincial lottery corporations.

Perspectives

Notes

- 1 Refers to total money wagered on non-charity lotteries, casinos and VLTs, minus prizes and winnings.
- 2 Survey of Household Spending (SHS) and National Accounts rankings of provincial expenditures differ, in part because the SHS includes both charity and non-charity gambling activity.
- 3 The expenditure figures are not adjusted for any winnings. As well, households consistently under-report the amount of money they spend on gambling. Comparisons with Lottery Corporation figures, for example, have shown that households under-report their government lottery purchases by more than 50%.

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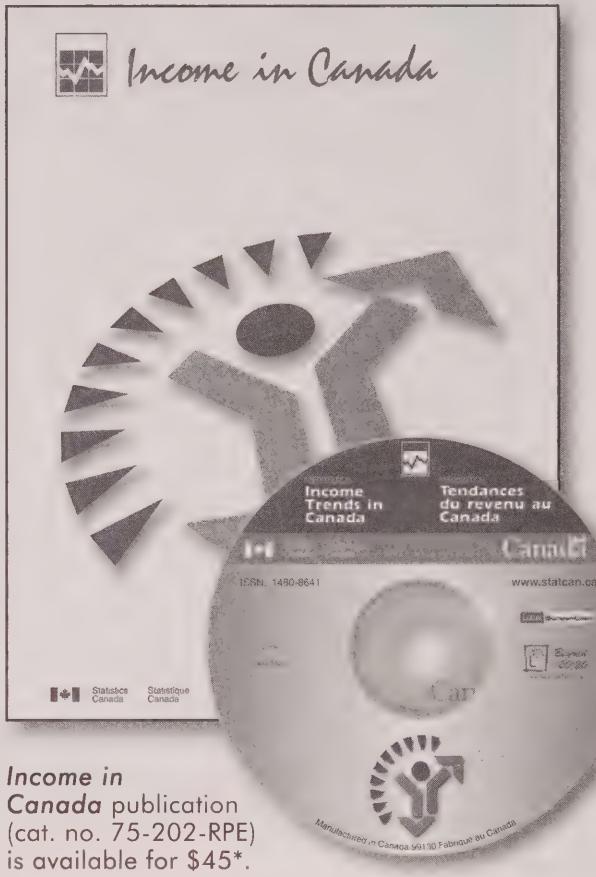
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■ Demographic statistics

The 2000 edition of *Annual Demographic Statistics* provides the most recent population estimates and projections up to 2005 by age group and sex, plus data on births, deaths and migrations. It groups the information by province and territory, census metropolitan area and census division, and also provides data on census families and marriages and divorces.

A CD-ROM, included with the publication, contains even more data than last year's edition. The historical series provide population data back to 1971

for provinces and territories, and to 1986 for census divisions and census metropolitan areas. The CD-ROM includes the population projections as well as animated age pyramids, which illustrate the aging of the population.

These time series can easily be captured and manipulated to create customized demographic analyses in any spreadsheet program. The population figures can be used to calculate per-capita rates for market research, quantitative analysis and planning.

Annual Demographic Statistics, 2000 (Catalogue no. 91-213-XPB, \$125 including CD-ROM) is now available. An electronic version without the CD-ROM (Catalogue no. 91-213-XIB, \$56) is also available. For more information, contact Lise Champagne, Demography Division, at (613) 951-2320; fax: (613) 951-2307; chamlis@statcan.ca.

■ Educational Planning

The vast majority of Canadian parents hope their children will get some form of college or university education, according to a new survey. However, in the case of more than half of these children, their parents have not set aside savings for their post-secondary schooling. The parents of 87% of children aged 18 or under reported to the 1999 Survey of Approaches to Educational Planning (SAEP) that they wanted their children to get an education beyond high school. However, parents of only 41% had savings in 1999 devoted expressly for college or university.

Not surprisingly, the gap between aspirations and savings behaviour was widest in households at the lowest end of the income scale. In addition, the amount of money parents have been putting aside for the post-secondary education of most children is substantially short of the current estimated total average cost of attendance.

And even if they had savings, most parents expected their children would require additional financial resources to pay for their post-secondary education. Half of all parents expected their children would need to take out a loan; in the vast majority of cases, these loans were expected to take the form of government student loans, rather than bank loans or loans from family members.

The SAEP was conducted by Statistics Canada in partnership with Human Resources Development Canada. It is the first Statistics Canada household survey to collect detailed information on how Canadians prepare for their children's post-secondary education. The survey was conducted in October 1999 as a supplement to the Labour Force Survey. Data were collected concerning 20,353 children aged 18 years or under in 1999.

The SAEP collected detailed information concerning two key sets of practices. Financial preparation dealt with whether savings are being set aside for their children's post-secondary education; awareness of the cost of post-secondary schooling; types of savings vehicles; and expectations regarding other means of financing post-secondary studies, including potential demand for student loans.

Non-financial preparation included communicating their aspirations and expectations concerning participation in post-secondary studies to their children; the extent of parental involvement in their children's learning and schooling; and attitudes and practices concerning homework and television viewing.

Detailed information was collected for both children and households, allowing analysis by such characteristics as children's age, sex, grade in school, academic performance, number of children in the family, household income, and parental education, occupation, and labour force status.

There was a clear relationship between the amount of savings and a child's age. For those with educational savings, parents reported median accumulated savings of \$1,500 for each child four or under and \$5,000 for each child 14 to 18.

Median education savings for each child declined as the number of children in the household increased. In households with only one child, median accumulated savings were \$3,600 in 1999. That fell to \$3,000 per child in households with three children, and to \$2,500

per child where there were four children or more. For all age groups, median savings tended to increase with household income.

Parents of 70% of children anticipated that their youngsters would help put themselves through college or university by working while in high school. And an even greater percentage of children, 86%, were expected to work while attending a post-secondary institution.

Households reporting savings used various types of savings plans. The most common were registered education savings plans, reported by parents of about 40% of children. These were followed by in-trust accounts, reported for 35% of children. Other types of savings plans, such as bank accounts and registered retirement savings plans, were reported for 48% of children.

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Centre for Education Statistics, at 1 800 307-3382; educationstats@statcan.ca or Kathryn McMullen, Family and Labour Studies Division, at (613) 951-0203; kathryn.mcmullen@statcan.ca.

■ *Computers in the workplace*

Nearly one-quarter of all workplaces, accounting for more than one-third of private-sector employees, made a significant investment in new computer technology in 1999, according to a new survey. These investments were not associated with either higher employee layoff rates or slower employment growth, at least in the short run, but rather with a burst of computer-related training.

In the 12 months prior to March 1999, an estimated 24% of all establishments accounting for 37% of private-sector employees implemented a major new software application or hardware installation. These numbers exclude upgrades to existing software applications and hardware installations.

Not surprisingly, workplaces that adopted computer technology provided more computer-related training than did other establishments. However, other data in the survey indicated that employees most often turned to self-learning and on-the-job training to acquire skills applying to specific hardware or software.

While some speculate that the adoption of computer technologies may result in job losses or gains, establishments that adopted technologies had about the same rates of both permanent layoffs and employment growth as other establishments, at least during the year the technology was adopted.

These are initial findings of the 1999 Workplace and Employee Survey (WES), a new survey of 6,300 workplaces and 24,600 of their employees. It will follow workplaces for at least four years and employees for two years, supporting research on both employer and employee outcomes. Statistics Canada conducted the survey with the support of Human Resources Development Canada and the Policy Research Initiative. WES is designed to provide an integrated view of the activities of employers and their employees. The survey will enable researchers to link business policies, practices and outcomes with employee characteristics, activities and outcomes.

Employers are sampled by physical locations. Employees are then sampled from employer-provided lists within each location. The survey covers technology adoption, innovation, human resource practices, labour turnover and business strategies of employers, as well as wages, training, technology use, working hours and other workplace activities of employees.

Fifty-one percent of workplaces that adopted computer technology provided formal or informal computer-related training in 1999, almost three times the rate of about 18% among those that did not adopt such technology. Twenty-three percent of employees of hardware/software adopters received computer-related training, 1.4 times the 14% of employees of other establishments.

Despite the strong relationship between hardware or software purchases and computer-related training, computer technology implementations did not seem to have spillover effects into other forms of training. Employees in workplaces that invested in computer technology were no more likely to receive other types of formal or informal training than were their counterparts in other establishments.

Establishments adopting computer technologies typically incur not only the direct costs of the hardware and software, but also the elevated formal training costs associated with the implementation. And formal

training activities represent only a part of all training activities related to computer applications. Time spent by employees on informal training activities also bear consideration (see *Working with computers* in this issue).

Other issues that will be examined in forthcoming studies include an overview of work place practices in Canadian companies, including "family-friendly" practices; the effect of foreign competition on the productivity-enhancing behavior of companies; a study of job vacancies; and the link between the education level of an establishment's work force and its technology adoption and innovation practices.

For more information on this report, contact Ted Wannell, Business and Labour Market Analysis Division, at (613) 951-3546. For information on the Workplace and Employee Survey, or to enquire about the concepts, methods or data quality of the survey, contact Howard Krebs, Labour Statistics Division, at (613) 951-4090; fax: (613) 951-4087; labor@statcan.ca.

■ Arts and culture graduates

The culture labour force has not been immune to the effects of the aging population. By the end of the 1990s, 50% of culture workers were between 35 and 54. Culture organizations have become increasingly concerned about their capacity to sustain the growth and vitality of their labour force.

Data from the National Graduates Survey showed that, in 1995, 84% of arts and culture graduates had found employment, compared with 79% in 1992. Despite this apparent success, between 1992 and 1995, the majority of these graduates did not find work in their chosen field. In 1995 alone, fewer than 30% of culture graduates reported that their job was directly related to their studies.

Income was also an issue. In 1995, university culture graduates from the class of 1990 earned an average \$30,500, while the entire class of university graduates averaged \$39,150.

Overall, between 1990 and 1995, arts and culture graduates were more likely to be moonlighting, be self-employed, earn lower pay, change employers and find only temporary work.

Labour Market Outcomes of Arts and Culture Graduates examines problems faced by the culture sector in replenishing a skilled, but aging workforce. It is published in the current issue of *Focus on Culture* (Catalogue no. 87-004-XIE, \$7/\$20 or Catalogue no. 87-004-XPB, \$9/\$27, Vol. 12, no. 3).

For more information, contact Marla Waltman Daschko or Pina La Novara, Culture, Tourism and the Centre for Education Statistics, at (613) 951-3028; marla.waltman-daschko@statcan.ca, or (613) 951-1573; pina.lanovara@statcan.ca, respectively; fax: (613) 951-9040.

■ **Literacy and the labour market**

Wage returns to literacy appear to be highest in countries such as Canada and the United States, where the demand for literacy skills is high and where literacy levels are highly variable. This study attempts to isolate the effect of literacy on the wages of Canadian workers. The findings confirm the importance of literacy to individual economic success in the labour market.

The study used Canadian data from the International Adult Literacy Survey to investigate the relationship between labour market success and literacy skills. The most commonly used and widely accepted measure of labour market success is earnings. Accordingly, this paper focused on the relationship between literacy and annual, weekly and hourly earnings. It also took into account other factors that influence labour market outcomes, such as educational attainment, sex and experience.

Literacy has a large effect on earnings, and accounts for about one-third of the estimated "return on education." Each additional year of education raises annual earnings by about 8.3%. Of that, about 3.1 percentage points result from the combined influences of education on literacy and, in turn, literacy on earnings.

Educational attainment appears to have a much larger effect on literacy than does work experience. Results suggest that general labour market experience has little net effect on literacy.

Individual earnings and parents' education levels are positively linked. However, there is little evidence that the educational attainment of parents exerts a positive influence on the child's earnings as an adult, once both educational attainment and literacy skills are taken into

account. This suggests that the positive association between parents' education and individual earnings is due principally to the influence of parents' education on the child's literacy skills and educational attainment.

Literacy, Numeracy and Labour Market Outcomes in Canada (Catalogue no. 89-552-MPE, \$10) is now available. An electronic version (Catalogue no. 89-552-MIE, free), as well as a paper summarizing the findings, *Highlights for Literacy, Numeracy and Labour Market Outcomes in Canada* (Catalogue no. 89F0125XIE or Catalogue no. 89F0125XPE, free) can be downloaded from Statistics Canada's Web site (www.statcan.ca). From the "Products and services" page, choose "Free publications," then "Education."

For more information, or to enquire about concepts, methods or data quality, contact Scott Murray, Institutions and Social Statistics Branch, at (613) 951-9035.

■ **Analytical Studies Branch research paper series**

Training as a Human Resource Strategy: The Response to Staff Shortages and Technological Change
J. Baldwin and V. Peters
Research Paper Series no. 154

This paper examines the ways that innovation and technology use affect the training activities of manufacturing plants. It looks at training that is introduced as a response to specific skill shortages versus training that is implemented in response to the introduction of advanced equipment. The study finds that plants that use advanced technology are more likely to have workers in highly skilled occupations, to face greater shortages for these workers, and to train workers in response to these shortages.

For more information, or to enquire about concepts, methods or data quality, contact Valerie Thibault, Analytical Studies Branch, at (613) 951-1804; thibaul@statcan.ca.

Job Tenure, Worker Mobility and the Youth Labour Market During the 1990s
A. Heisz, A. Nakamura and G. Picot
Research Paper Series no. 155

This research study examines trends in job stability and the low youth employment rate during the 1990s. According to the study, the 1990s labour market was characterized largely by decreased labour mobility.

That is, workers remained longer with their firms than they did during the 1980s. The expected average length of paid jobs increased 36% between the late 1980s and late 1990s.

Jobs that started between 1987 and 1989 had an expected duration of 37 months, and jobs starting between 1997 and 1999 were expected to last an average of 50 months. The increase was associated with a decline in the proportion of paid jobs that lasted six months or less. In 1999, 38% of jobs were expected to last less than six months, down from 55% in 1991 and 48% in 1996.

Job duration rose for both male and female job starters in all age groups, but not for workers with only high school education or less.

Jobs were more stable in the 1990s because workers were less likely to quit than they were during the 1980s. When comparing similar years in the business cycle, the rate of quitting jobs was lower during the 1990s than during the 1980s. Low rates of quitting were associated with the slow economic growth through the mid-1990s, and reflected equally sluggish hiring in paid jobs.

This study also examined labour market trends for young people aged 15 to 24 in the 1990s. At first glance, the youth labour market appears to have performed poorly over the decade. The proportion of young people employed—the employment-population ratio—fell during the 1990s. While there was some recovery between 1998 and 2000, it remained below values observed at the peak of the 1980s business cycle.

However, this long-term decline in the youth employment-population ratio was associated mainly with an increased tendency for this group to stay in school. Among non-students, the 1999 employment rate had returned to the level of the 1981 cyclical peak, but not up to the level of 1989.

For more information, or to enquire about concepts, methods or data quality, contact Andrew Heisz or Garnett Picot, Business and Labour Market Analysis Division, at (613) 951-3748 or (613) 951-8214, respectively.

The Analytical Studies Branch produces research papers on a variety of topics such as labour, business firm dynamics, mortality, immigration, statistical

computing and simulation. These papers are based on research conducted by branch staff, visiting fellows and academic associates.

Electronic versions of these and other research papers can be downloaded from Statistics Canada's Web site (www.statcan.ca). From the "Products and services" page, choose "Research papers (free)," then "Social conditions."

■ **Farm family income**

Farm families obtained proportionally more income from non-farm sources in 1998 than they did in 1997, according to personal income tax data. Income from non-farming activities accounted for approximately 71 cents of every dollar in farm family income in 1998, two cents more than in 1997. On average, farm family income was \$61,100 in 1998, up 3.2% from 1997, a slower pace of increase than the 4.2% gain in 1997.

This overall increase in 1998 resulted from a 6.1% gain in off-farm income, which offset a 3.3% decline in net farm operating income (before depreciation). Average off-farm income amounted to \$43,700 in 1998, about 71% of total income. Average net farm operating income totalled \$17,400, or 29% of total income.

Also contributing to the growth in average total income were a 7.3% increase in average pension income, and a 6.8% increase in other off-farm income, which included increased payouts from the Net Income Stabilization Account (NISA provides financial assistance to producers by stabilizing their net income).

Investment income of farm families fell 1.2% in 1998 due to a 5.4% drop in dividend income from taxable Canadian corporations. Average investment income declined at a slower pace than in 1997 (-3.7%) due to higher interest rates. Average interest income increased 0.7%. Three-quarters of farm families received investment income, unchanged from 1997.

Wages and salaries were still the most important source of off-farm income in 1998, accounting for 61% of the total. Pension income accounted for 12% of total off-farm income, and investment income, 10%.

Among the provinces, farm families in Alberta reported the highest average total income (\$65,200), up 5.4% from 1997, slightly higher than the \$64,500

posted in Ontario. Families in Prince Edward Island had the largest percentage gain, up 15.1% to \$57,500. This growth was due to a substantial gain (39.8%) in average net farm operating income. Farm families in Newfoundland recorded the only decline, down 4.0%. They also had the lowest total income at \$48,700.

Farm families in British Columbia reported the highest off-farm income (\$54,500), followed by those in Alberta (\$49,200). Farm families in Quebec again recorded the lowest off-farm income (\$31,600).

For custom data requests, contact the Client Services Unit, Agriculture Division, at 1 800 465-1991; agriculture@statcan.ca. For more information, or to enquire about concepts, methods or data quality, contact Lina Di Piétre, Agriculture Division, at (613) 951-3171; fax: (613) 951-3868; lina.dipietro@statcan.ca.

■ **Agriculture Analysis Bulletins**

Measuring Economic Well-Being of Rural Canadians Using Income Indicators (No. 13)

This bulletin compares trends in income for rural families with trends among urban families. While rural families had lower incomes on average in the 1970-to-1997 period, the income gap between rural and urban families was closing. Rural families in the Atlantic Provinces and Quebec had relatively lower incomes, whereas rural families in Ontario and British Columbia had relatively higher incomes.

Employment Structure in Rural and Small Town Canada: An Overview (No. 14)

This bulletin uses census data to show the structure and change in employment in rural areas between 1981 and 1996.

In 1996, predominantly rural regions provided employment for 29% of Canadians, a share that has been virtually constant since 1981. The services sector accounted for 65% of all jobs in rural and small town Canada, ranking as one of the top two sectors in each province. It was followed closely by manufacturing. The lack of access to a metropolitan centre appears to constrain employment growth. Only rural regions adjacent to a major metropolitan centre reported employment growth above the Canadian average in each five-year period between 1981 and 1996.

These bulletins (Catalogue no. 21-006-XIE, nos. 13 and 14, free) are published in collaboration with the Rural Secretariat of Agriculture and Agri-Food

Canada, as part of a series of analysis bulletins profiling trends in rural Canada. They are available on Statistics Canada's Web site (www.statcan.ca): on the "Products and Services" page, choose "Free Publications," then "Agriculture." To order data, or for general information, call 1 800 465-1991. For more information, contact Roland Beshiri or Ray Bollman, Agriculture Division, at (613) 951-6506; roland.beshiri@statcan.ca or (613) 951-3747; ray.bollman@statcan.ca, respectively; fax: (613) 951-3868.

■ **Financial Security**

The Survey of Financial Security, which covered about 16,000 responding households, collected information on the assets and debts of families and unattached individuals from May to July 1999—providing the most comprehensive statistical portrait yet of Canadians' net worth. It obtained data on all major financial and non-financial assets, and on mortgage, vehicle, credit card, student loan and other debts. The survey was developed with the support of Human Resources Development Canada, Canada Mortgage and Housing Corporation and Industry Canada

In 1999, Canadians overall had an estimated \$16 in debts for every \$100 in assets. However, the debt burden was much higher for some types of families. For example, lone-parent families, most of which are headed by women, had a debt burden almost twice the national average, about \$29 for every \$100 of assets. Two-parent families with children owed \$23 for every \$100 of assets.

Canadians had debts estimated at \$458 billion, three-quarters of which took the form of mortgages. Loans on owned vehicles amounted to about \$29 billion, or 6% of the total, while student loans (3%) and credit card debt (3%) each exceeded \$14 billion.

Total assets, everything from stocks and bonds to principal residences, amounted to almost \$2.9 trillion. The single most important non-financial asset for Canadians was their principal residence, which accounted for about 38% of total assets. The most important financial asset was their registered retirement savings plans, which represented 12% of all assets. (The value of employer-sponsored pension plan benefits was not used to calculate assets.)

The median net worth of Canada's estimated 12.2 million family units was about \$81,000: half of all family units had net worth more than this figure, and

half had less. Net worth is the amount an individual or family would clear after selling all assets and paying off all debts.

Substantial differences in the distribution of net worth were evident among family units in 1999. The 10% of family units with the highest net worth held 53% of all personal wealth in 1999. The 10% at the low end of the net worth scale actually owed more than they owned. By comparison, in 1998, the top 10% of families in the United States held about two-thirds of all personal net worth.

Median net worth was highest in 1999 for family units in Ontario, \$101,400. Newfoundland families had the lowest net median worth, about \$53,000. Income levels explain most of the wide variation in net worth. In Newfoundland, 31% of families had after-tax income in 1998 of less than \$20,000, compared with only 21% in Ontario.

Education was one of the most important determinants of net worth. Family units in which the individual or major income recipient did not graduate from high school had a median net worth of \$62,500. When the major income recipient had a bachelor's degree, median net worth almost doubled, to \$117,500.

Occupation, like education, is a key determinant of net worth. Families in which the occupation of the unattached individual or major income recipient was classified as management had the highest net worth. Those with the lowest net worth worked in sales and service. This included childcare workers, retail salespersons, cashiers, chefs, cooks and persons providing food and beverage services, protective services and travel and accommodation services.

In addition, self-employed individuals had a much higher net worth than employees. Family units in which the major income recipient had earnings from self-employment had a median net worth of \$216,200, about three times higher than the level of \$71,300 among employees.

The Assets and Debts of Canadians: An Overview of the Results of the Survey of Financial Security (Catalogue no. 13-595-XIE, free) is now available on Statistics Canada's Web site (www.statcan.ca). On the "Products and services" page, choose "Free publications," then "Personal finance and household finance." Summary data tables are also available free

of charge. On the "Canadian Statistics" page, choose "The people," then "Families, households and housing," then "Assets and debts."

Tabulations on the *Composition of Assets and Debts Held by All Family Units, Canada, Regions and Provinces, 1999* (Catalogue no. 13F0040XDB, \$60); *Family Units and Net Worth by Net Worth Groups, Canada, Regions and Provinces, 1999* (Catalogue no. 13F0041XDB, \$60); *Net Worth of Economic Families, Unattached Individuals and All Family Units by Selected Family Characteristics, Canada, Regions and Provinces, 1999* (Catalogue no. 13F0042XDB, \$60) are also available.

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Income trends**

Income Trends in Canada on CD-ROM provides accurate and reliable statistics about income from employment and other sources, taxes, the impact of government transfers on family income, differences in earnings between women and men, seniors' incomes, income inequality and the depth of low income. It contains nearly two decades of data for Canada, the provinces and 15 metropolitan areas. This product enables users to easily view trends on-screen, quickly search data, create custom tables, and chart income data.

Income Trends in Canada (Catalogue no. 13F0022XCB, \$195) is now available. More information about this product is available on Statistics Canada's Web site (www.statcan.ca) in *Income Trends in Canada (1980-1998)—User's Guide* (Catalogue no. 75F0002MIE01001, free). On the "Products and services" page, choose "Research papers (free)." For more information, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 951-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Historical labour force data**

The latest annual *Labour Force Historical Review* on CD-ROM is a comprehensive database of Labour Force Survey estimates, containing thousands of cross-classified data series and spanning more than two decades from 1976 to 2000. Monthly and annual average series are available on a wide range of subjects,

including labour force status by demographic, education and family characteristics; trends in the labour markets of metropolitan areas and economic regions; industry and occupation estimates; and much more.

A total of 21 new tables have been added to this CD package. They include annual and monthly tables on hirings and separations, retirement age, labour force characteristics for rural and urban areas, wages of employees by job permanency and union coverage, and weekly and hourly wage distributions.

The 2000 *Labour Force Historical Review* (Catalogue no. 71F0004XCB, \$195) is now available. LAN and bulk prices are available on request. To order this edition, contact your nearest Statistics Canada Regional Reference Centre or e-mail to order@statcan.ca.

For more information, contact Marc Lévesque, Labour Statistics Division, at (613) 951-2793, or refer to Statistics Canada's Web site (www.statcan.ca). From the "Canadian statistics" page, choose "The People," then "Labour, employment and unemployment," then "Labour force historical review."

Historical Labour Force Statistics is an annual publication that provides the seasonally adjusted employment and unemployment statistics presented each month in the media. It includes data going back 10 to 20 years on general labour market characteristics for Canada, the provinces and metropolitan areas. Each year, the series are updated and revised according to the latest information on seasonal models and factors.

Historical Labour Force Statistics, 2000 (Catalogue no. 71-201-XPB, \$75) is now available. For more information, contact Jeannine Usalcas, Labour Statistics Division, at (613) 951-4720; fax: (613) 951-2869; usaljea@statcan.ca.

■ *Canada Year Book*

First published in 1867, the *Canada Year Book* has become the premier reference resource on the social and economic life of Canadians.

Enjoyable and easy to read, the *Canada Year Book* draws on various Statistics Canada surveys to describe leading Canadian social, economic and environmental trends. Works by some of the nation's best photographers and artists enrich the book's 15 chapters, while detailed tables and figures zero in on today's important issues.

Feature articles cover distinctive aspects of life in Canada: What does the average household spend most of its income on? How many men are now stay-at-home fathers? What percentage of Canadians exercise? What is the most commonly spoken mother tongue after English and French in Canada?

The 2001 edition of the *Canada Year Book* (Catalogue no. 11-402-XPE, \$65) is now available. For more information, contact Nathalie Turcotte, Communications Division, at (613) 951-4673; fax: (613) 951-5116; turcnat@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources
Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Financial Security

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General social survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusted

Pension Funds
Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Client Services
(613) 951-7608

Median net worth increased with income.

After-tax family income in 1998



Source: Survey of Financial Security, 1999

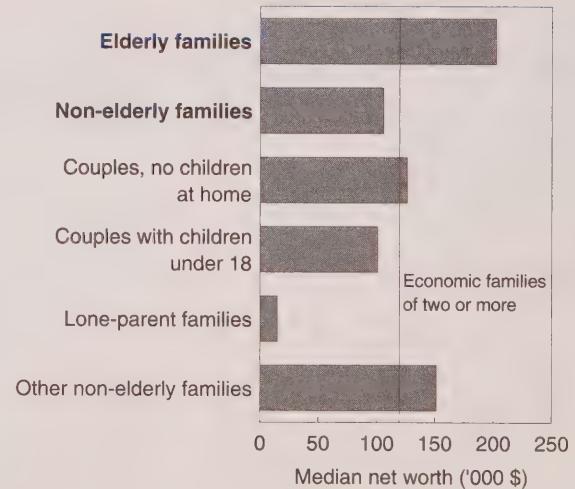
The median net worth of Canada's estimated 12.2 million "family units" was about \$81,000 in 1998. This means that half of all family units had net worth more than this, and the other half had less. Net worth is the amount an individual or family would clear after selling all assets and paying off all debts. The term family unit includes both unattached individuals and families of two or more people related to each other living in the same dwelling.

There was a strong direct relationship between income and net worth. Family units who reported after-tax income of \$75,000 or more in 1998 had a median net worth of \$314,200. On the other hand, family units whose after-tax income was less than \$10,000 had a median net worth of \$1,700.

The median net worth of all families of two or more was \$119,300. There were large differences, however, in the net worth of the two types of families with children under 18 years of age living at home. Lone-parent families had the lowest median net worth (\$14,600); the median net worth of couples with children under 18 was a good deal higher (\$100,500). Income appears to explain some of these differences. Lone-parent families had a median after-tax income in 1998 of \$21,800, compared with \$48,400 for two-parent families with children under 18.

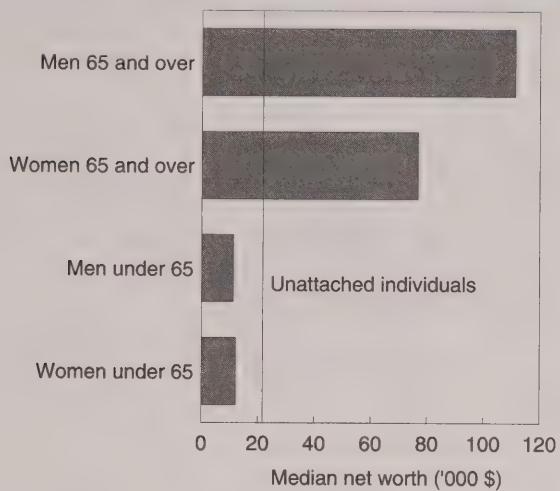
Elderly families in which the major income recipient was 65 or older had the highest estimated net worth of any type of family unit (\$202,000), in part because many live in their own mortgage-free home. This should not be interpreted to mean that all elderly families have relatively high net worth. The relationship between income and net worth does not hold for those 65 and over. The median after-tax income of elderly families was in fact lower than for most other families of two or more. Their net worth is a reflection of previous income and purchases rather than of current income.

Lone-parent families had the lowest net worth.



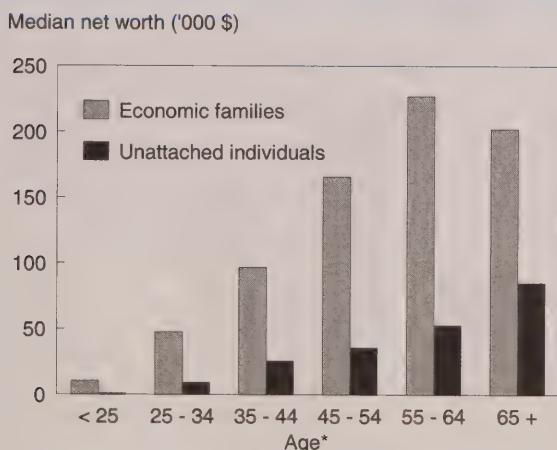
Source: Survey of Financial Security, 1999

Men 65 and over had the highest net worth of the unattached.



Source: Survey of Financial Security, 1999

Median net worth was highest for economic families with the major income recipient aged 55 to 64.



Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

The median net worth of unattached individuals (\$21,700) was considerably lower than that of families of two or more. The unattached can be separated into two very different groups. The unattached elderly (those 65 and older) were much better off than the younger unattached. Elderly men had the highest median net worth of the unattached (\$111,100) and men under 65 the lowest (\$11,200).

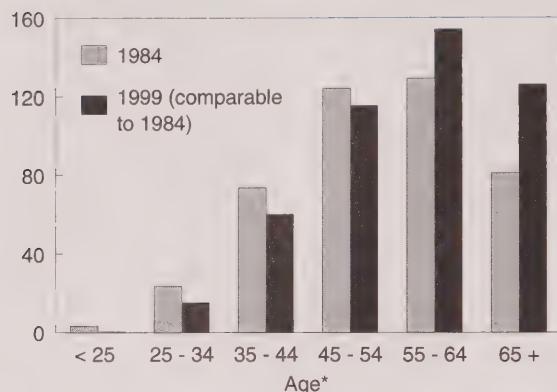
The lower net worth of the non-elderly unattached in relation to that of non-elderly families can be explained in several ways. Income is one important reason. Twenty percent of the unattached under 65 had no earnings in 1998; this was the case for just 7% of non-elderly families. Also, many (71%) non-elderly families benefited from having two or more incomes from employment. Age is also a factor. A large proportion (44%) of non-elderly unattached were under 35; just 26% of non-elderly families had a major income recipient under 35.

In the case of families of two or more, elderly families had a higher net worth than non-elderly families overall. Median net worth was highest for those families in which the major income recipient was 55 to 64 years of age (\$226,900). This is to be expected, as elderly families in many cases may need to use some of their assets to supplement their income.

The net worth of unattached individuals was well below that of economic families, for every age group. Although net worth increased with age for the unattached, the median net worth of all age groups under 65 was substantially lower than for those 65 and older. Many of the unattached 65 and older may have spent a large part of their lives as part of a family and their higher net worth may be a reflection of this.

Between 1984 and 1999, median net worth increased for those 55 and over.

Median net worth ('000 \$)



Source: Survey of Financial Security

* For families, refers to major income recipient.

Between 1984 and 1999, couples with children fared less well than any other type of family; their net worth decreased, albeit slightly, over this period. Elderly family units and couples with no children at home fared the best. Unattached elderly individuals recorded a 69% increase from 1984, while elderly families and couples with no children at home experienced a growth of 42%.

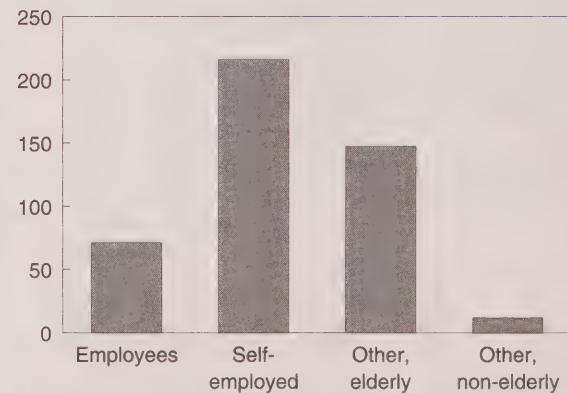
Although lone-parent families gained between 1984 and 1999, relatively speaking they were, in both years, significantly less well off financially than any other type of family unit. The situation of the unattached non-elderly changed little from 1984 to 1999, in either relative or absolute terms.

Only those family units in which the major income recipient was 55 or older recorded an increase in median net worth from 1984 to 1999; for all younger age groups median net worth dropped. The median net worth of those family units in which the unattached individual or major income recipient was 65 or older increased the most, 56%.

The median net worth of family units in which the major income recipient was self-employed was three times greater than if that person was an employee (\$216,200 compared with \$71,300). This was not related as much to income as to business equity, which was a much more important asset for the self-employed than for employees; for the self-employed business equity represented 33% of total assets, compared with 8% for employees. The value of employer pension plan benefits is not included in this estimate of net worth. Including this value would change the overall distribution of net worth; it would increase the net worth of employees but not that of the self-employed.

The self-employed* had higher net worth.

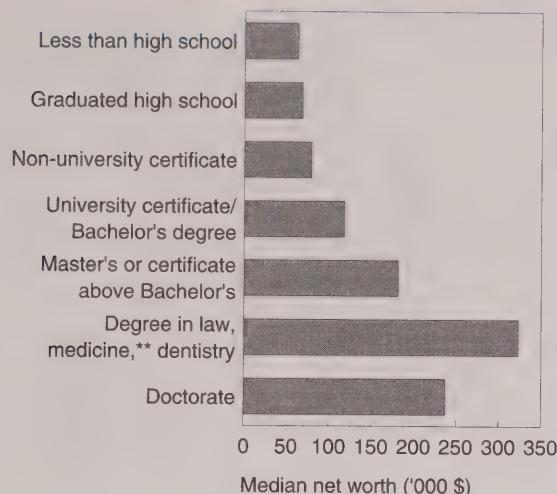
Median net worth ('000 \$)



Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

Education* makes a difference.



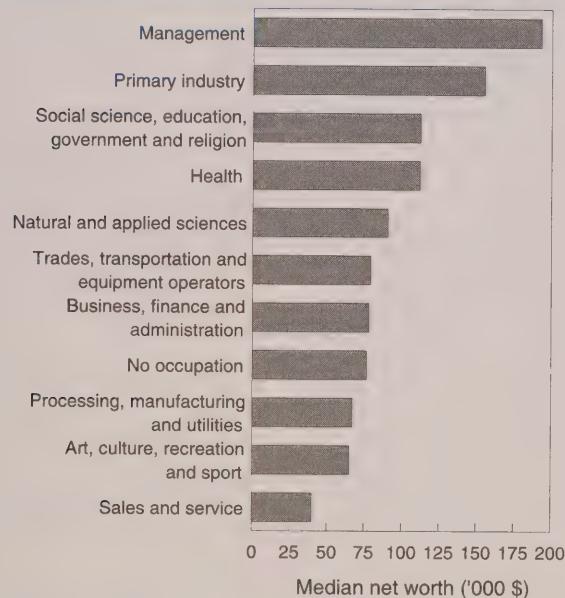
Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

** Includes veterinary medicine and optometry.

The level of education of the individual, or the major income recipient in the case of families, makes a significant difference to the financial situation of the family unit. It is one of the most important determinants of net worth, as it affects both income and occupation. Median net worth rose from \$62,500 for family units in which the individual or major income recipient in the family had not graduated from high school to \$323,000 if that person had a professional degree in law, medicine, dentistry, veterinary medicine or optometry. Relative to those whose highest level of education was high school graduation, the median net worth of those with a Bachelor's degree was 1.7 times higher, with a Master's degree 2.7 times higher and with a Doctorate 3.5 times higher.

Workers in management occupations* had the highest net worth.



Occupation, like education, is a key determinant of net worth. Family units in which the occupation of the unattached individual or major income recipient was classified as management had the highest net worth. Those with the lowest net worth worked in sales and service occupations. This included childcare workers; retail salespersons; cashiers; chefs, cooks and food and beverage services; protective services; and travel and accommodation services. For the most part, family units in which the major income recipient was in an occupation associated with higher (after-tax) income also had higher net worth. This was not true for occupations, other than labourers, related to primary industry (which includes agriculture, fishing and forestry). Their net worth is related less to recent income than to their business equity, that is, the value of the property and equipment required to conduct their business.

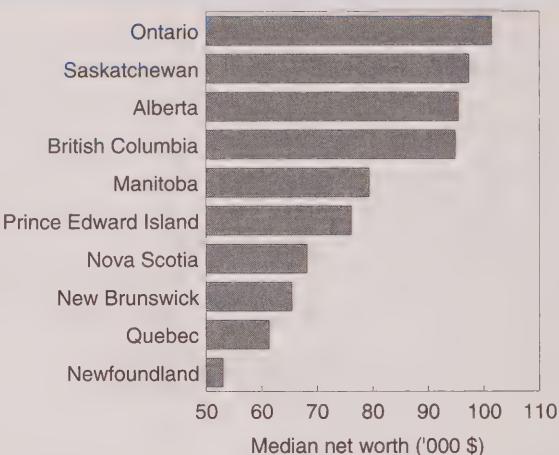
Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

The median net worth in Ontario and the western provinces was higher than in the provinces east of Ontario. Family units in Ontario had the highest median net worth (\$101,400) and those in Newfoundland the lowest (\$53,000). Income again helps to explain this. In Newfoundland, 31% of family units had after-tax income of less than \$20,000 in 1998, compared with 21% in Ontario.

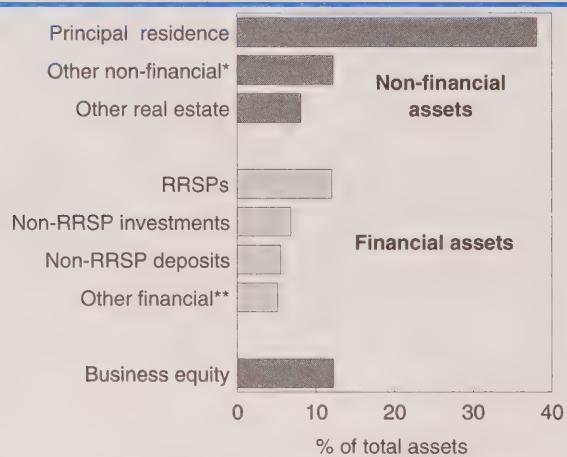
Although Newfoundland had the highest proportion of family units that owned their principal residence (73% versus 60% for all provinces), the median value of the homes in Newfoundland was less than half the median for all provinces (\$60,000 versus \$125,000). This has a major effect, as principal residence is the largest contributor to the net worth of most family units.

Median net worth was highest in Ontario and the three westernmost provinces.



Source: Survey of Financial Security, 1999

A family's principal residence was their greatest asset.



Source: Survey of Financial Security, 1999

* Includes vehicles.

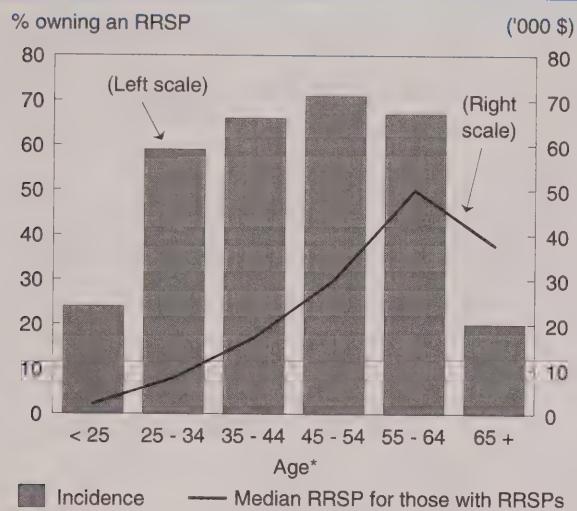
** Includes other registered plans.

Assets can be subdivided into three main categories: financial assets, non-financial assets and equity in business. Non-financial assets accounted for the largest proportion of the total, 58%, financial assets 29% and business equity 12%.

The most important non-financial asset was the principal residence, which accounted for 38% of total assets. The median value of the principal residence, for homeowners, was \$125,000. The median net worth of those family units who did not own their principal residence was \$8,200, much lower than for those who owned with a mortgage (\$111,800) or without a mortgage (\$259,200).

The "other" non-financial assets comprise other real estate, owned vehicles, contents of the principal residence, collectibles and valuables. Other real estate (most commonly vacation or second homes, or rental property) was owned by 16% of family units; over three-quarters owned at least one vehicle.

Median value of RRSPs peaked among persons 55 to 64.



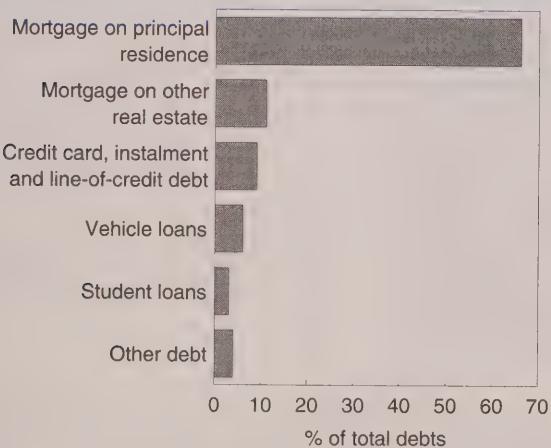
Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

The single most important financial asset for Canadians in 1999 was the amount held in registered retirement savings plans (RRSPs). They accounted for 12% of total assets, compared with 4% in 1984.

Fully 55% of family units had RRSPs. The proportion reached 71% when the major income recipient was 45 to 54. The amount many held in RRSPs, however, was still relatively modest. The median amount of the RRSP held by family units, for those having them, was \$20,000; family units 55 to 64 had the highest median savings in RRSPs: \$50,000. The average amount held in RRSPs was much higher than the median: \$51,200 for all family units and \$96,900, for those 55 to 64 years of age. The difference between the average and the median arises because some family units had significant savings in RRSPs.

Mortgages were the largest source of debt.



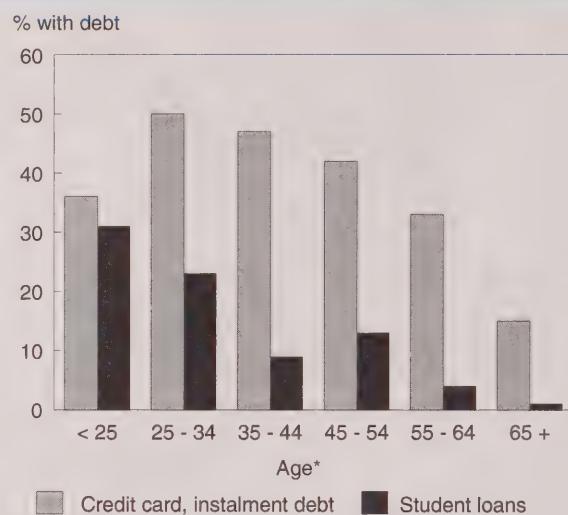
Source: Survey of Financial Security, 1999

Mortgages, on both the principal residence and other real estate, accounted for over three-quarters (78%) of the debt of family units. The remaining debt was in the form of student loans (3%) and consumer credit. The latter comprised credit card and line-of-credit debt (9%), vehicle loans (6%) and other debts (4%).

Student loans were reported by 12% of family units, and by as much as 31% of family units in which the major income recipient was under 25. The median student loan owed by family units reporting them was \$7,300. Student loans represented 52% of the debt of those under 25 who did not own their principal residence (88% of that age group).

Credit card or instalment debt was reported by 50% of major income recipients aged 25 to 34. The older age groups were much less likely to carry such debt; only 15% of individuals or families 65 and older reported credit card or instalment debt.

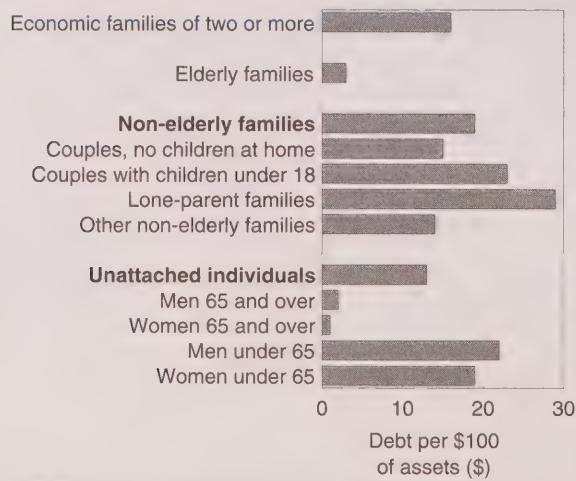
Half of those 25 to 34 have credit card or instalment debt; 30% under 25 have student loan debt.



Source: Survey of Financial Security, 1999

* For families, refers to major income recipient.

Lone-parent families had the highest debt to asset ratio.



Source: Survey of Financial Security, 1999

Overall, for every \$100 of assets, Canadian family units had \$16 in debts. This amount was much higher for some types of families. Lone-parent families owed \$29 for every \$100 owned and two-parent families with children owed \$23. Elderly family units owed the least: unattached elderly men owed \$2 for every \$100 of assets, elderly women \$1 and elderly families \$3.

The largest debt burden was carried by younger people. Family units under 25 owed \$31 for every \$100 of assets. Among those 25 to 34, mortgage holders faced the heaviest debt burden—about \$46 for every \$100 of assets.

Charts and text were adapted from "The Assets and Debts of Canadians: An Overview of the Results of the Survey of Financial Security" (Statistics Canada, Catalogue no. 13-595-XIE). For more information, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; income@statcan.ca.

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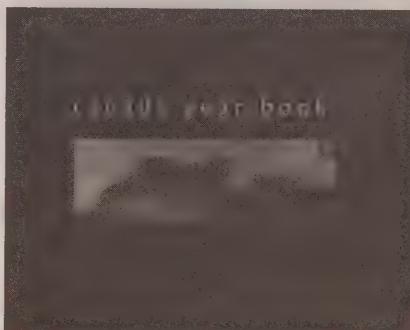
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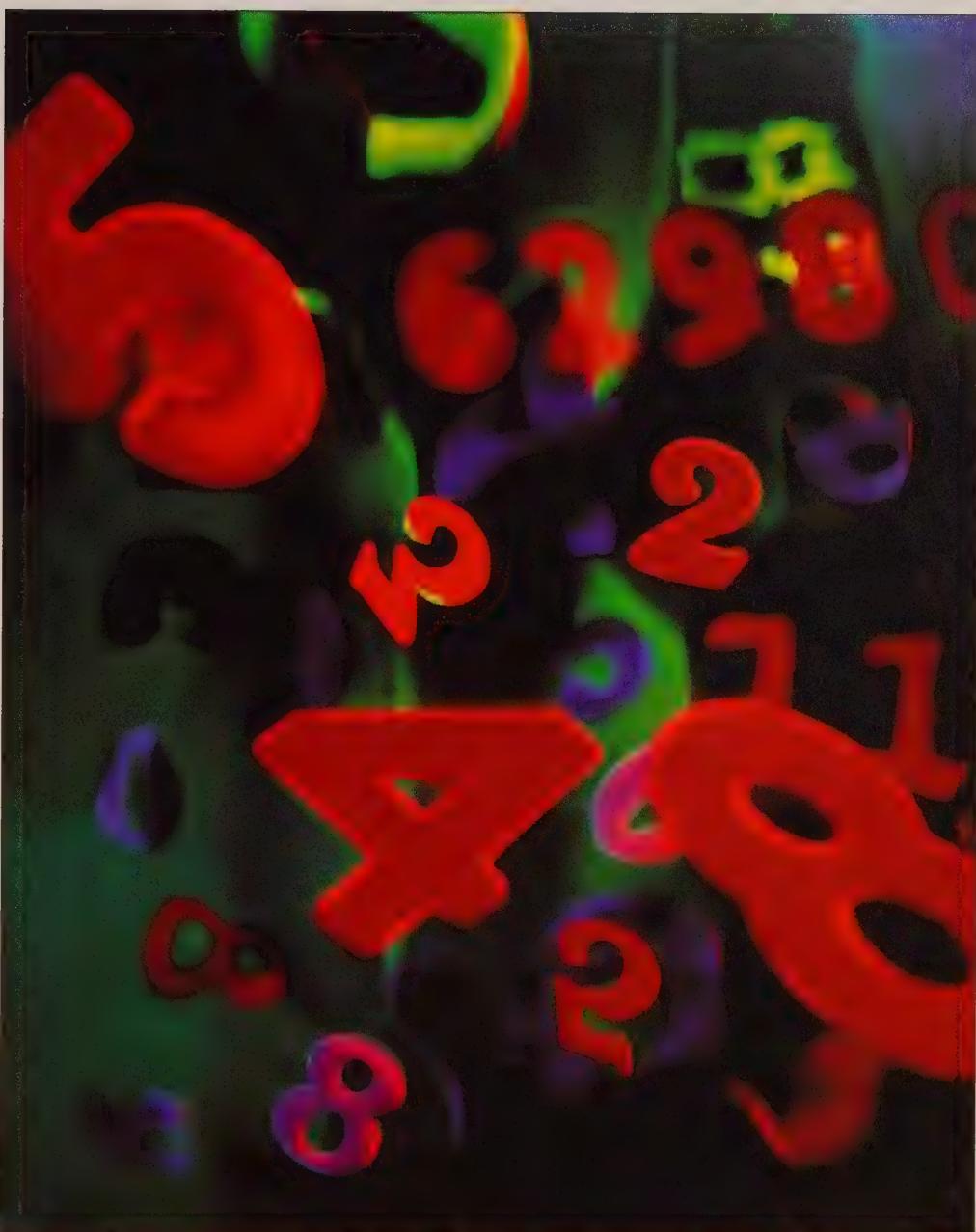


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ON LABOUR AND INCOME

AUTUMN 2001
Vol. 13, No. 3

- RRSPs
- TIME LOST
- LOW INCOME
- A DEGREE OF DIFFERENCE
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Sex, age and pension coverage all influence the rate at which people participate in RRSPs. However, to determine the effects of these factors, this article shows that the influence of income must be taken into account.

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This article offers some historical perspective on industrial strife—the number of strikes and lockouts and workdays lost—in Canada. The time-loss ratio (workdays lost per 1,000 employees) is used to compare trends over the last two decades.

17 Low income intensity: urban and rural families

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Low income intensity incorporates the more commonly known low income rate and the average depth of low income to provide a more complete measure of low income. This article uses the measure to compare urban and rural families in Canada between 1993 and 1997.

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27 Liberal arts degrees and the labour market

Philip Giles and Torben Drewes

This article examines the labour market experiences of bachelor's level university graduates over a five-year period. It compares humanities and social sciences graduates with those from more applied programs.

34 Employment and earnings of postsecondary graduates

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Have early labour market outcomes deteriorated recently for postsecondary graduates in Canada? The evidence suggests this has not been the case, or at least not to the degree some may have thought. (Adapted from an article in the Autumn 2000 issue of *Education Quarterly Review*.)

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Forum

From the Managing Editor

■ This issue's first article revisits the issue of who contributes to registered retirement savings plans. RRSPs are one of the most important financial assets of Canadians—about 40% of the total. Although men on average are more likely than women overall to contribute to an RRSP, they also typically have higher incomes. However, if the comparison is by income level, women are actually more likely to contribute to an RRSP at each level. The article also examines the effects of age and employer-sponsored pension plan coverage on RRSP participation.

As has become an annual tradition in the autumn issue, *Perspectives* once again focuses on organized labour. This year, we look at the trend in workdays lost because of labour disputes. "Time lost due to industrial disputes" examines trends in Canada since 1980. We have also produced our annual update on unionization, which now becomes part of our 'Fact-sheet' series. Because of the volume of data, only abridged versions of the tables are provided here. The complete tables are available as a free PDF file through the "Key labour and income facts" link in our online version—go to www.statcan.ca, select "Our products and services," then "In Depth," then "Perspectives on labour and income" and then "Perspectives: The online edition."

For many years now, Statistics Canada has published a widely used set of low income cutoffs (LICOs) to measure the rate of low income in Canada. While not intended for use as poverty lines, they do provide an indication of the degree of low income in various areas of the country. "Low income intensity: urban and rural families" combines the LICOs with the average depth of low income to provide a more complete measure of low income in Canada. The article uses this alternate measure to compare urban and rural families in 1993 and 1997.

Generalize or specialize—which will provide the better career path? For the most part, the debate has been philosophical. Now, the longitudinal Survey of

Labour and Income Dynamics provides empirical evidence to fuel the debate. "Liberal arts degrees and the labour market" looks at bachelor's level degree holders and compares the earnings and labour market experiences of humanities and social sciences graduates with those of graduates from more vocationally oriented programs. In general, humanities and social sciences graduates seemed to take longer making the school-to-work transition and their initial earnings were lower on average. Older graduates, however, surpassed their applied programs counterparts in earnings and had more secure employment.

On the subject of the returns to education, "Employment and earnings of postsecondary graduates" explores the school-to-work experiences of college and university graduates from the classes of 1982, 1986 and 1990. Using follow-up surveys done two and five years after graduation, the study looks at the employment and earnings experiences of recent graduates in the first years of their careers.

Key labour and income facts

The Labour Force Survey (LFS) and the Survey of Employment, Payrolls and Hours (SEPH) are perhaps the best-known of Statistics Canada's labour market surveys, but employment and payroll information is also collected by many industry-specific surveys. In this issue we spotlight 19 annual surveys covering services ranging from accounting to consulting to traveller accommodation. Though not as timely as the LFS or SEPH, the employment and earnings numbers can be combined with other financial data to provide a detailed picture of very specific industries.

As always, we welcome your comments and suggestions.

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Highlights

In this issue

■ Who contributes to RRSPs? A re-examination

... p. 7

- In 1999, 44.8% of men aged 25 to 64 with RRSP room made an RRSP normal contribution, compared with 37.6% of women. However, men also had higher incomes than women had. When men's and women's RRSP participation rates were compared within the same income brackets, women had higher rates in every bracket.
- RRSP participation rates were highest for people aged 45 to 54, also the age group with the highest incomes. When comparisons were made within the same income brackets, persons aged 45 to 54 had the highest participation rate only at incomes below \$30,000. At higher incomes, 25 to 34 year-olds had the highest participation rate.
- People with an employer-sponsored pension plan had a higher RRSP participation rate—and higher incomes—than people without such a plan. However, comparing within the same income brackets, those with pensions had higher participation rates only at incomes below \$30,000. At higher incomes, people without pension plans were the more likely contributors.

■ Time lost due to industrial disputes

... p. 14

- Work stoppages and the resulting workdays lost due to labour disputes have generally declined over the past two decades. Strikes and lockouts in Canada totalled 1,028 in 1980, but dropped to 377 in 2000.

- The number of workdays lost per 1,000 employees (the time-loss ratio) fell from 953 in 1980 to 133 in 2000.

■ Low income intensity: urban and rural families

... p. 17

- Despite an economy-wide expansion, low income intensity rose roughly equally for both rural and urban families between 1993 and 1997. However, the percentage growth was higher in rural areas. Low income intensity grew 13.1% in rural areas, 11.9% in small/medium urban areas, and 8.0% in large urban areas.
- Associated with the rising low income intensity was little or no increase in market income—despite a generally improving economy—and a decline in total transfer payments, especially Employment Insurance benefits received by low income families.
- Transfers to families appear to have declined by a similar percentage for both urban and rural low income families. But because rural low income families received a greater fraction of income from transfers, the change affected them more than urban families.

■ Liberal arts degrees and the labour market

... p. 27

- Wage rates for applied programs graduates were about 6% higher than for humanities and social sciences graduates for both men and women. However, this wage advantage declined with age and actually reversed for those 45 and older.

- From January 1993 to December 1997, the humanities and social sciences group averaged over one week more of unemployment than the applied programs graduates did. The difference was almost entirely due to higher unemployment among humanities and social sciences men.
- The average number of job transitions during the five-year period was comparable, with the humanities and social sciences group recording slightly higher overall transition rates for both sexes.

■ Employment and earnings of postsecondary graduates ... p. 34

- Postsecondary graduates at all levels from the classes of 1982, 1986 and 1990 experienced unemployment rates that were generally lower than those of non-graduates and improved significantly between two and five years following graduation.
- The average earnings of male graduates of the more recent cohorts have either held steady or shown small to moderate declines relative to earlier groups, while women's earnings have either remained stable or risen.

■ What's new? ... p. 55

■ Just released

Manufacturing industries of Canada: National and provincial areas, 1998

Productivity growth in Canada

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Report on the demographic situation in Canada
National Income and Expenditure Accounts
National Construction Industry Wage Rate Survey, 2000

Employment dynamics

Employment Insurance

Survey of Labour and Income Dynamics Public-use Microdata File, 1998

Survey of Household Spending Public-use Microdata File, 1999

Income prospects of British Columbia university graduates
A report on adult education and training in Canada: Learning a living

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Education in Canada, 2000

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Who contributes to RRSPs? A re-examination

Boris Palameta

REGISTERED RETIREMENT SAVINGS PLANS (RRSPs) are one of the most important financial assets of Canadians¹ (Statistics Canada, 2001a). Previous studies have established that RRSP participation rates are heavily influenced by income, but other potentially important factors—such as sex, age, and membership in an employer-sponsored pension plan—have not been investigated thoroughly. For example, although men on average participate at higher rates than women, they also typically have higher incomes. Hence, they may be more likely than women to contribute to an RRSP simply because they have a greater capacity to do so. Indeed, at equal income levels, women are more likely to contribute (Statistics Canada, 1999).

It is useful to distinguish between capacity to contribute and incentive to contribute—one does not necessarily imply the other. For instance, members of an employer-sponsored pension plan—identified by the presence of a pension adjustment (PA) on their tax forms—are about twice as likely as those with no pension coverage to contribute to an RRSP (Akyeampong, 1999; Statistics Canada, 1999). Although having an employer-sponsored pension plan is associated with high income, and therefore a high capacity to contribute, it is not clear that this would encourage RRSP contributions. In fact, having a PA may actually discourage contributions for two reasons: a pension guarantees retirement savings, even in the absence of an RRSP; and, a PA decreases the amount of tax-deductible income that can be used to purchase an RRSP (RRSP room). People with no pension coverage might in fact participate at higher rates than those with PAs, were their capacities to contribute the same.

RRSP participation rates also increase with age, up to age 54 (Akyeampong, 2000; Statistics Canada, 1999). However, income also increases with age. This

begs the question: do older people participate at higher rates simply because they have a greater capacity to do so, or because they have a greater incentive?

This paper uses 1999 tax data (the most recent year that was available) to investigate the effects of sex, pension coverage and age on RRSP participation (see *Data source and definitions*). Comparisons between men and women, between those with and without PAs, and between different age groups are made at various income levels. The analysis is restricted to taxfilers aged 25 to 64 that had RRSP room in 1999.² The amounts contributed are not examined.

Women participate at higher rates than men

In 1999, some 44.8% of men aged 25 to 64 with RRSP room made an RRSP normal contribution, compared with 37.6% of women.³ However, men also had higher incomes—only 25.7% had annual incomes below \$20,000, compared with 47.2% of women; 42.5% had annual incomes of \$40,000 or more, compared with only 19.5% of women.

Men have a greater capacity to contribute than women do, but the playing field can be levelled by comparing men's and women's participation rates within the same income bracket. Women's participation rates were in fact higher in every income bracket (Chart A). And the pattern held when either age or PA status was factored in.⁴

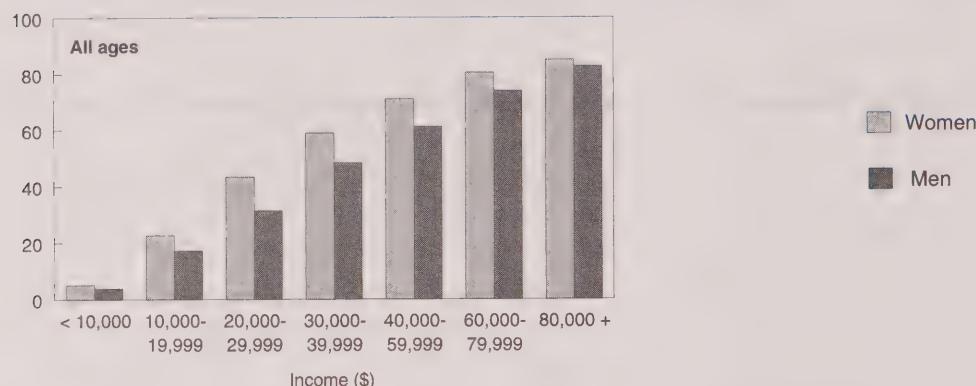
For all age groups, women's participation rates exceeded men's in every income bracket, except 55 to 64 year-olds with incomes of \$80,000 or more.

Women with PAs participated at higher rates than men with PAs in every income bracket (Chart B). Women without PAs also participated at higher rates than men without PAs, except those with incomes of \$80,000 or more.

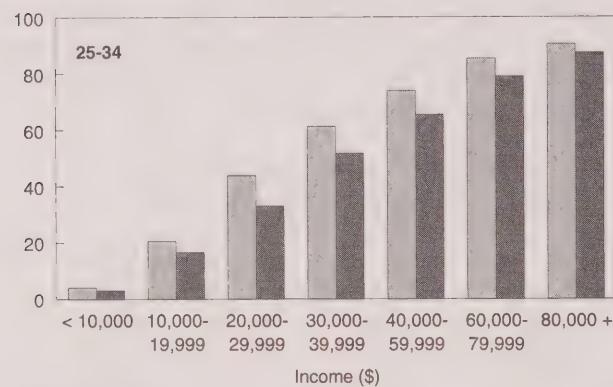
Boris Palameta is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-2124 or boris.palameta@statcan.ca.

Chart A: Women participated in RRSPs at higher rates than men, in all income brackets.

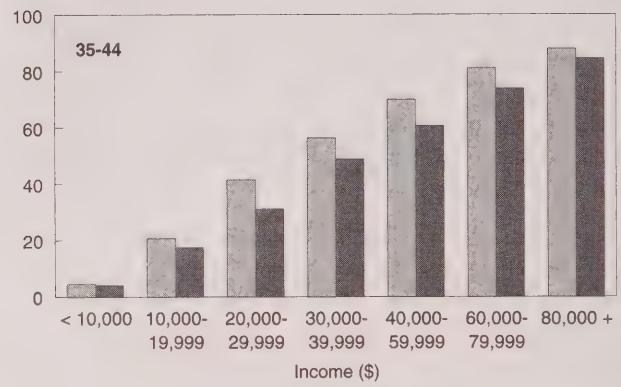
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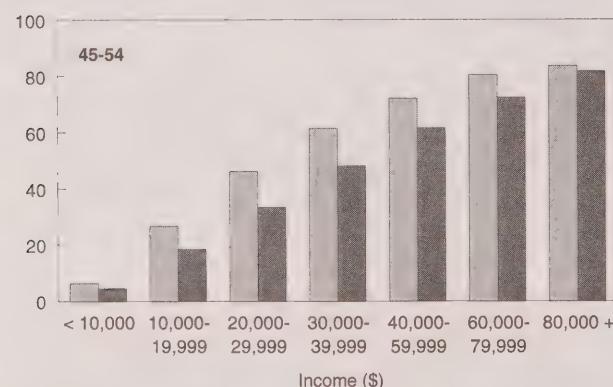
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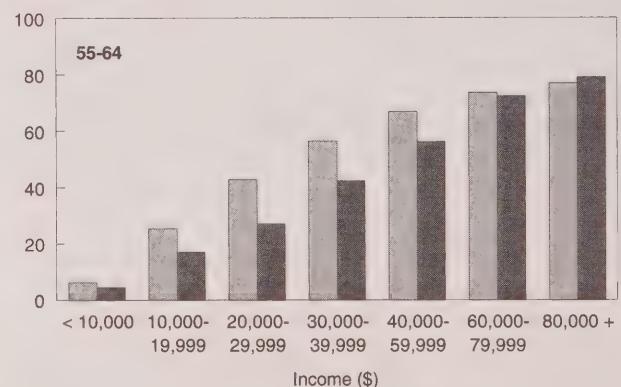
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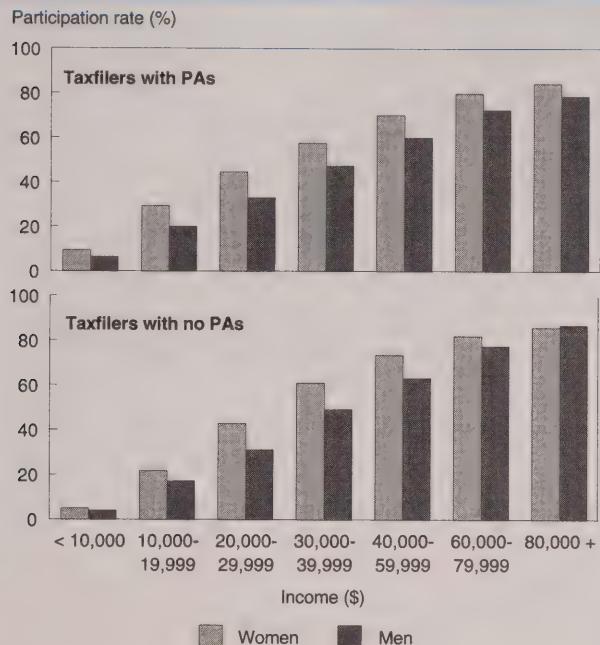


Participation rate (%)



Source: PA/RRSP file, 1999

Chart B: With PAs or not, women participated in RRSPs at higher rates than men.



Source: PA/RRSP file, 1999

Participation rates do not always increase with age

RRSP participation and income were both highest for people aged 45 to 54 (Table). Again, it is no surprise that the highest participation rate occurred at the age when people have the highest capacity to contribute.

Table: RRSP participation and income, by age, 1999

RRSP participation	Income	
	< \$20,000	\$40,000 +
	%	
25 to 34	37.6	41.5
35 to 44	42.1	33.9
45 to 54	46.3	31.6
55 to 64	37.5	39.8
		21.8
		33.8
		38.8
		29.2

Source: PA/RRSP file

When capacity to contribute was held constant by comparing age groups within the same income brackets, a somewhat different result emerged. Persons 45 to 54 had the highest participation rate at incomes less than \$30,000. However, at incomes of \$30,000 or more, 25 to 34 year-olds had the highest participation rate (Chart C).

A similar pattern emerged when age groups were split by sex or PA status. Men and women 25 to 34 participated at higher rates than their older counterparts in high income brackets.

Among people with PAs, the highest participation rate was found among 55 to 64 year-olds in low income brackets, and 25 to 34 year-olds in high income brackets. For those without PAs, 45 to 54 year-olds had the highest participation rate in low income brackets. In the two highest income brackets, 25 to 34 and 35 to 44 year-olds were virtually tied for highest participation rate.

Having a PA is associated with a higher participation rate only at low incomes

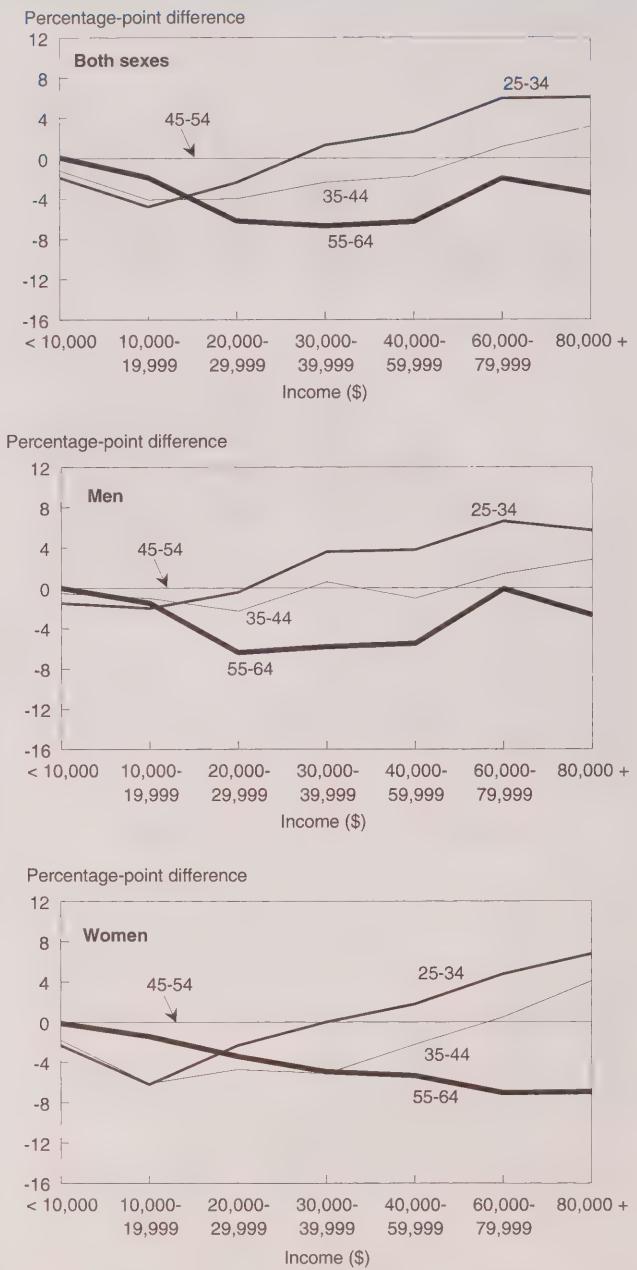
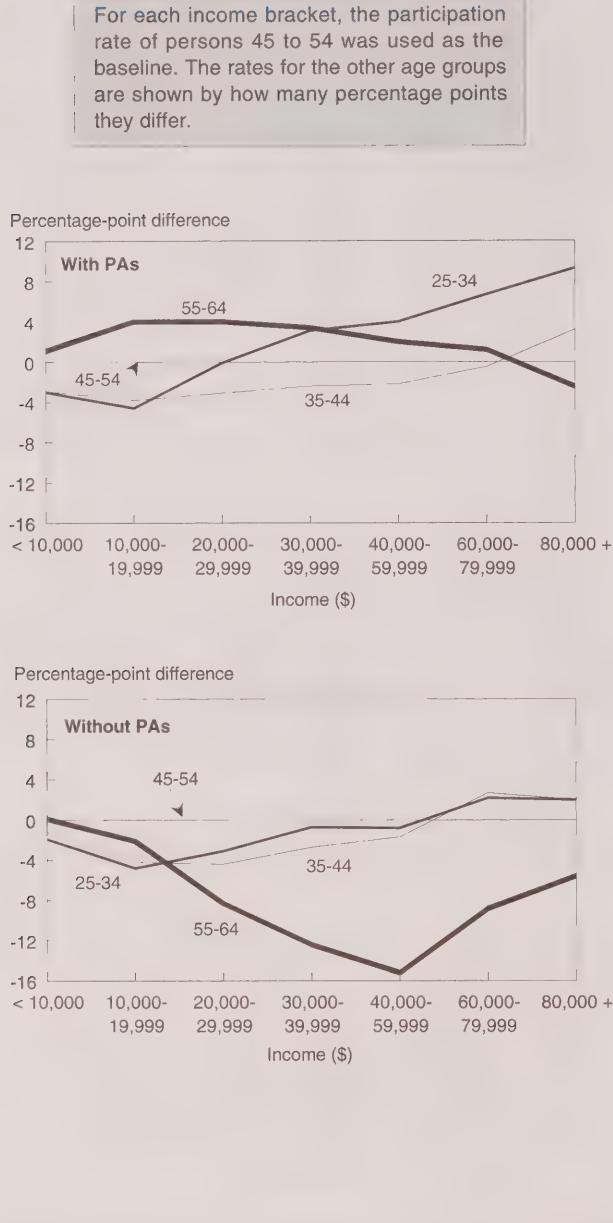
People with a PA had a higher RRSP participation rate than people without a PA—58.2% compared with 33.1%. However, the majority (57.3%) of people with a PA had annual incomes of \$40,000 or more, while the majority (50.3%) of those with no PA had incomes less than \$20,000.

If people with no PA had the same capacity to contribute as people with a PA, would their participation rates still be lower? In fact, people with PAs had higher participation rates only at incomes below \$30,000—at higher incomes, those without PAs were the more likely contributors (Chart D). This result held for both men and women and for most age groups (Chart E). An exception occurred for those 55 to 64, where having a PA was associated with greater likelihood of contribution in all income brackets except the highest.

Summary

This paper shows that in order to more meaningfully assess how factors such as sex, age, and pension coverage influence RRSP participation rates, one must control for the effects of income. Overall, men participate at higher rates than women, older people participate at higher rates than young people, and people with PAs participate at higher rates than people

Chart C: At high incomes, younger persons had higher participation rates.



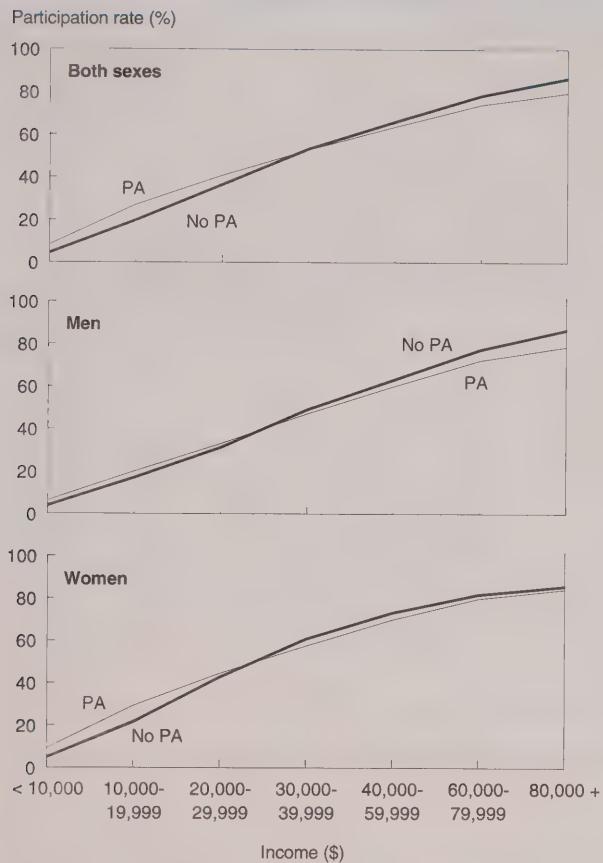
Source: PA/RRSP file, 1999

without PAs. However, these results are largely attributable to income differences among the groups being compared. When comparisons were made at equal income levels, women, young people, and people without PAs had the higher participation rates in

most cases. Further investigation is needed to shed light on exactly why these groups may have greater incentive to participate in RRSPs.

Perspectives

Chart D: At incomes above \$30,000, people without PAs had higher participation rates.



Source: PA/RRSP file, 1999

Data source and definitions

This analysis complements the findings released in *Retirement Savings Through RPPs and RRSPs, 1999* (Statistics Canada, 2001b). The data originate from the PA/RRSP file, a longitudinal file on the retirement savings behaviour of each taxfiler since 1991. The analysis is limited to 1999 and uses a 2% sample of all taxfilers. Although some of the differences shown in this article are quite small, they are confirmed by the full file.

Income: total income as reported on line 150 of the T1 income tax form. It includes income from all sources, less losses from rental property and self-employment.

Earned income: the portion of total income that is used to determine RRSP room. It includes employment and self-employment income, business and rental income, and disability payments (less employment expenses such as union dues, and business and rental losses).

Pension adjustment (PA): For taxfilers whose employers provide a company pension plan, a PA is calculated according to a formula prescribed by the Canada Customs and Revenue Agency. The PA varies according to the amount contributed to the pension plan by the employer and the employee. The PA must be deducted from RRSP room. The PA deduction allows people without an employer-sponsored pension plan to make higher RRSP contributions than people with the same income whose employer provides a pension plan. For a small number of high-earning employees, the PA is high enough to wipe out their RRSP room entirely—these individuals are excluded from the study.

RRSP normal contribution: a contribution made within the limit set by the taxfiler's current RRSP room. In rare cases, such as some retiring allowance rollovers, taxfilers are permitted to make contributions that exceed their current RRSP room. Such contributions are excluded from this analysis.

RRSP participation rate: the percentage of taxfilers with RRSP room who make an RRSP normal contribution.

RRSP room: the maximum RRSP contribution that can be deducted from income (for income tax purposes). RRSP room increases with earned income. The maximum allowable annual new room is either a dollar amount or 18% of earned income, whichever is lower. In 1999, the dollar amount was \$13,500. For those with an employer-sponsored pension plan, new room is reduced by the amount of the pension adjustment. Since 1991, any unused room can be carried over for use in subsequent years.

4 Comparisons that split men and women according to income, age, and PA status are not shown, because in many cases aggregates were too small to ensure accurate results. For example, among persons 55 to 64 in the 2% sample, only 86 women and 36 men had PAs and incomes less than \$10,000.

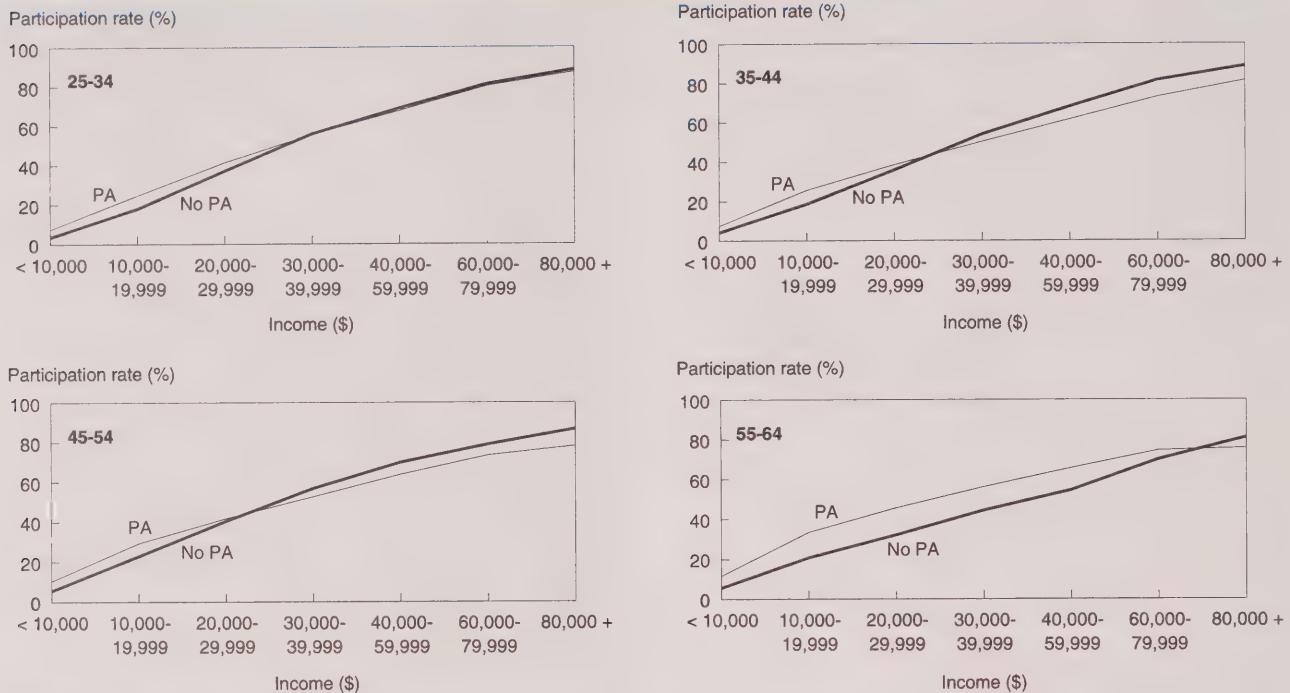
Notes

1 RRSPs constitute 40% of total financial assets of Canadians, outstripping other savings instruments such as deposits in financial institutions, non-registered mutual funds, stocks, and bonds. The value of employer-sponsored pension plans was *not* included in the calculation of assets.

2 People under 25 were excluded because many of them have not yet completed a transition into the labour force, while many people 65 and over have already retired.

3 In some cases, these may be spousal RRSPs, where contributions are claimed as a deduction by one spouse but are credited to the other spouse's RRSP. The PA/RRSP file does not identify these situations.

Chart E: Except among 55 to 64 year-olds, those without PAs had higher participation rates at incomes of \$30,000 or more.



Source: PA/RRSP file, 1999

■ References

- Akyeampong, E.B. "Saving for retirement: RRSPs and RPPs." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 11, no. 2 (Summer 1999): 21-27.
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Appendix: RRSP participation rates, 1999

Income	All ages			25 - 34			35 - 44			45 - 54			55 - 64		
	Both sexes	Women	Men	Both sexes	Women	Men	Both sexes	Women	Men	Both sexes	Women	Men	Both sexes	Women	Men
%															
All taxfilers															
< \$10,000	4.7	5.1	3.9	3.7	4.0	3.0	4.4	4.5	4.0	5.6	6.3	4.5	5.7	6.2	4.5
\$10,000 - 19,999	20.6	22.7	17.3	18.8	20.5	16.5	19.5	20.6	17.5	23.6	26.7	18.5	21.7	25.3	17.0
\$20,000 - 29,999	37.9	43.4	31.5	38.4	43.8	33.0	36.8	41.4	31.1	40.8	46.1	33.4	34.6	42.7	27.0
\$30,000 - 39,999	53.3	59.0	48.4	56.0	61.3	51.7	52.3	56.2	48.7	54.7	61.3	48.1	48.0	56.4	42.3
\$40,000 - 59,999	64.8	71.1	61.3	68.3	73.9	65.4	63.9	69.9	60.6	65.7	72.1	61.6	59.4	66.8	56.1
\$60,000 - 79,999	75.6	80.4	73.9	80.5	85.3	79.0	75.7	81.0	73.8	74.6	80.5	72.4	72.6	73.5	72.3
\$80,000 +	83.1	85.0	82.7	88.1	90.5	87.4	85.2	87.8	84.5	82.1	83.7	81.7	78.6	76.8	79.0
With a PA															
< \$10,000	8.4	9.3	6.3	7.4			7.5			10.4			11.5		
\$10,000 - 19,999	27.1	29.3	20.0	24.8			25.6			29.4			33.4		
\$20,000 - 29,999	41.0	44.5	33.0	41.6			38.6			41.7			45.7		
\$30,000 - 39,999	53.0	57.5	47.2	55.8	*	*	50.3	*	*	52.7	*	*	56.1	*	*
\$40,000 - 59,999	63.9	70.0	60.0	67.7			61.5			63.7			65.7		
\$60,000 - 79,999	74.2	79.8	72.3	80.1			72.9			73.4			74.6		
\$80,000 +	79.6	84.1	78.6	87.4			81.3			78.1			75.6		
Without a PA															
< \$10,000	4.6	4.9	3.9	3.6			4.3			5.5			5.6		
\$10,000 - 19,999	19.8	21.7	17.1	18.1			18.7			22.9			20.8		
\$20,000 - 29,999	36.7	42.8	31.2	37.3			36.0			40.4			32.1		
\$30,000 - 39,999	53.5	60.8	49.1	56.1	*	*	54.1	*	*	56.8	*	*	44.4	*	*
\$40,000 - 59,999	66.2	73.3	63.1	69.0			68.1			69.8			54.6		
\$60,000 - 79,999	78.4	81.8	77.3	81.0			81.5			78.8			70.0		
\$80,000 +	86.4	85.7	86.6	88.6			88.6			86.6			81.0		

Source: PA/RRSP file

Note: The overall RRSP participation rate in 1999 was 41.3%.

* See note 4.

Time lost due to industrial disputes

Ernest B. Akyeampong

STATISTICS ON TIME LOST due to industrial disputes (strikes and lockouts) have always attracted widespread attention. Such time losses have several ramifications: they tend to reduce overall economic output, as well as corporate and government revenues; they tend to reduce the earnings, and hence spending power, of workers directly or even indirectly involved in the dispute; and they can also lead to social unrest.

With increasing economic globalization and trade liberalization (for example, the North American Free Trade Agreement), interest in this type of information has lately assumed an added dimension, since international differences may now play a role in corporate decisions on plant or office location (see *International work-stoppage statistics*).

To offer some historical perspective on industrial strife in Canada, this study combines Statistics Canada data with information compiled by Human Resources Development Canada (HRDC, 2001) on workdays lost due to strikes and lockouts over the past two decades.

Days lost have trended down over the past two decades

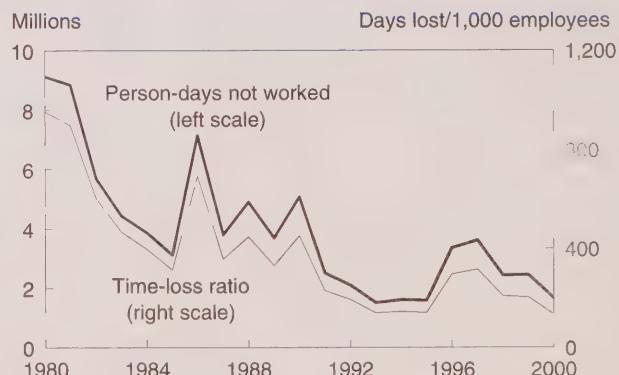
Analysis of year-over-year changes and trends in labour-dispute statistics is not straightforward. The annual data are affected by the collective bargaining timetables (in particular, the number and length of collective agreements), the size of the unions involved, the duration of the stoppages, the state of the economy, as well as any changes in industrial relations legislation.

Nevertheless, the available data for the past 20 years do reveal overall downward trends in both the number of industrial disputes and the resulting days

lost (Chart). The average annual number of work stoppages in Canada due to strikes and lockouts in the 1980s was almost double that of the 1990s (754 versus 394). The resulting workdays lost averaged 5.5 million annually in the 1980s, more than double the 2.6 million of the 1990s (Table). Using a *time-loss ratio* (the number of workdays lost due to strikes and lockouts per 1,000 employees) enables a meaningful comparison of the industrial dispute statistics. The annual average ratio fell from 547 in the 1980s to 233 in the 1990s.

A comparison of the 2000 data with those of 1980 reveals an even more dramatic decline. In 1980, work stoppages due to strikes and lockouts totalled 1,028; in the year 2000, the corresponding number was just 377. Similarly in 1980, the resulting person-days not worked amounted to 9.1 million; in 2000 they totalled 1.7 million. The time-loss ratio in 1980 was estimated to be 953; in the year 2000, the corresponding figure was 133, only one-seventh the 1980 level.

Chart: Person-days not worked due to labour disputes and the time-loss ratio have both trended down over the past two decades.



Sources: Human Resources Development Canada, Workplace Information Directorate; Labour Force Survey

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Table: Strikes and lockouts and person-days not worked

	Work stoppages	Person-days not worked	Employees	Time-loss ratio*
		'000	'000	
1980	1,028	9,130	9,584	953
1981	1,049	8,850	9,854	898
1982	679	5,702	9,443	604
1983	645	4,441	9,476	469
1984	716	3,883	9,731	399
1985	829	3,126	9,932	315
1986	748	7,151	10,323	693
1987	668	3,810	10,625	359
1988	548	4,901	10,938	448
1989	627	3,701	11,183	331
1990	579	5,079	11,241	452
1991	463	2,516	10,963	230
1992	404	2,110	10,841	195
1993	381	1,517	10,830	140
1994	374	1,607	11,076	145
1995	328	1,583	11,259	141
1996	330	3,352	11,293	297
1997	284	3,610	11,421	316
1998	381	2,444	11,715	209
1999	413	2,446	12,066	203
2000	377	1,662	12,488	133

Sources: Human Resources Development Canada, Workplace Information Directorate; Labour Force Survey

* The number of workdays lost due to strikes and lockouts per 1,000 employees.

Workdays lost to date in 2001 have changed little from 2000

The 90 strikes and lockouts during the first five months of 2001 were less than the 207 recorded during the same period in the preceding year. The 855,000 workdays lost from the stoppages during 2001, however, were slightly higher than the 827,000 of the year before, reflecting in part longer strike durations in 2001. Ten major strikes in Newfoundland, Quebec, Ontario, Alberta and British Columbia accounted for approximately 75% of total time lost during the first five months of 2001.¹ In spite of the slightly greater work time lost in 2001, the time-loss ratio remained unchanged at around 68 in both periods because of a higher employee count in 2001.

International work-stoppage statistics

Because of differences in definitions and statistical coverage, international comparisons of labour dispute statistics must be made with caution.

Many countries rely on voluntary notification of a dispute to a national or local government department. In Canada, the data reflect all work stoppages that come to the notice of Human Resources Development Canada's Workplace Information Directorate. Also, many countries, including Canada, do not measure work time lost at establishments whose employees are not involved in a dispute but are unable to work because of a shortage of materials supplied by establishments that are on strike.

In addition, significant differences exist between countries on the threshold used to determine whether a particular stoppage should be entered in the official records. Most countries exclude small stoppages (judged by the number of workers involved, the length of the dispute, or the number of days lost) from the statistics. In particular, the threshold for inclusion is very high in the United States (1,000 workers), and so is the threshold of 100 workdays lost in Denmark. In Canada, the threshold for inclusion is 10 or more person-days lost.

Some countries also exclude disputes in certain industrial sectors. For example, Portugal excludes public sector strikes. Several others exclude certain types of disputes: Portugal excludes general strikes from work-stoppage statistics, Japan excludes days lost in unofficial disputes, and the United Kingdom excludes so-called political work stoppages. No such exclusions exist in Canada.

Finally, the inclusion or omission of workers indirectly involved in a stoppage, namely those who are unable to work because others at their workplace are on strike, varies between countries. The United States, together with many other countries such as the United Kingdom, France and Australia, attempts to include them. Canada, along with countries such as Germany and Italy, excludes them from the statistics. A complete description of these international coverage and definitional differences is contained in "A Technical note on coverage and methodology comparability of Labour Dispute Statistics" in the British journal, *Labour Market Trends* 109, no. 4.

Summary

Canada's record on time lost due to industrial disputes has improved over the years. The average annual number of workdays lost per 1,000 employees (the time-loss ratio) fell from 547 in the 1980s to 233 in the 1990s. Moreover, the ratio of 133 recorded in 2000 was the lowest since 1980.

Perspectives

■ Note

1 Major strikes January to May 2001:

Province	Workers	Workdays lost
Newfoundland	Hospital support staff	24,180
	Provincial general service staff	16,900
Quebec	La compagnie minière Québec-Cartier	37,990
	Camco Inc.	17,330
Ontario	Toronto District School Board	247,000
	Falconbridge Ltd., Sudbury	43,710
	McMaster University, Hamilton	42,900
	Toronto Star	33,330
Alberta	Calgary Transit	70,200
British Columbia	Coast Mountain/TransLink	107,250

■ References

Human Resources Development Canada. *Workplace Gazette* 4, no. 1 (Spring 2001): 40-44.

United Kingdom National Statistics Office. "International comparisons of labour disputes in 1999," *Labour Market Trends* 109, no. 4: 195-201.

For the most recent data on unionization, see the fact-sheet in this issue.

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Low income intensity: urban and rural families

Andrew Heisz

THIS PAPER EXAMINES low income intensity among urban and rural families for the years 1993 and 1997. Low income intensity incorporates both the more commonly known low income rate and the average depth of low income. Changes in the low income rate often underestimate changes in the economic well-being of low income individuals and families. By combining rate and depth information, low income intensity provides a more complete measure of low income.

The years 1993 to 1997 encompassed a period of economic growth in Canada when one might have expected some reduction in low income following the recession of 1990-1992. In real terms, the gross domestic product (GDP) grew 14% between 1993 and 1997, an average of just over 3% per year.

Despite the economy-wide expansion, the measure of low income intensity rose between 1993 and 1997 for both rural and urban families. The size of the increase was roughly equal in absolute terms for both types of families. However, since intensity was comparatively low in rural areas, its rate of growth was slightly higher—13.1% compared with 11.9% in small/medium urban areas, and 8.0% in large urban areas. Low income intensity also rose for self-employed farmers with unincorporated farms.

Underlying the rise in low income intensity were changes in market and transfer incomes. Market income for families with low income rose only slightly, or not at all, despite the growth in the economy, whereas transfers fell. Declines in transfer income were associated primarily with reduced Employment Insurance (EI) receipts. Social assistance receipts also declined, but to a lesser extent. Other transfers rose somewhat, but failed to offset these declines. EI

decreases affected low income families in all provinces, but had the largest effect on rural families in the Atlantic provinces. Social assistance fell most for low income families in Ontario and Alberta.

The focus is on non-elderly families, because one objective was to look at income changes by source of income. Elderly families have a substantially different income mix than non-elderly families, which would have necessitated a different approach. Otherwise, the study encompasses all families and individuals. For convenience, individuals and families are referred to as ‘families’ (see *Data source and definitions*).

Low income intensity: a more complete measure of low income

The low income rate is at best a partial indicator of low income. While it shows what fraction of the population is below a pre-determined cutoff, it does not indicate how far below they are—the low income gap. One could imagine a policy that gave money to the worst-off Canadians, but not enough to lift any recipients above the threshold. While this transfer would clearly make low income Canadians better off, it would not affect the low income rate. Low income intensity takes into account both the *rate* and the *depth* of low income (see *Low income cutoffs*).

Low income intensity is defined as the product of three factors: the low income rate, the low income gap, and the level of inequality of the gap:

$$\text{Intensity} = \text{Rate} \times \text{Gap} \times \text{Inequality}.$$

This yields a simple graphical interpretation of low income intensity—the volume of a three-dimensional box (Osberg, 2000). To make matters simpler, the third term is nearly constant in most cases, making it possible to display low income intensity in two dimensions as a function of the rate and the gap.²

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Data source and definitions

Data are from the 1993 and 1997 versions of the T1 family file (T1FF), created and maintained by the Small Area and Administrative Data Division (see *T1FF and the official Statistics Canada low income estimates*). The T1FF comprises all T1 tax records filed by Canadians, grouped into families. Records for children and non-filing spouses of taxfilers are imputed from information on the taxfiler's T1. Thus, all income sources and the tax bill can be tallied for each family, along with its basic demographic profile and area of residence. The full file is large—over 29 million records in 1997—but this study uses a 10% file of randomly selected records to yield 1.2 million families in each of 1993 and 1997. Approximately 20% are rural families.

Since the analysis uses tax data, the sources of income are those normally reported on the T1 file, plus the federal Child Tax Benefit, the Goods and Services Tax (GST) or the Harmonized Sales Tax (HST) credit, provincial family benefits and provincial refundable credits. One important source of income not consistently reported on the T1 file over this period is family allowance benefits. These are non-taxable provincial and local programs targeted at families with dependent children. A number of different programs are grouped under the family allowance banner and these differ between provinces. Provincial family allowance benefits are available in this data in 1997 but not 1993. This mainly affects the incomes measured for residents of Quebec who received provincial family allowance benefits in both years. Residents of some other provinces received provincial family allowance benefits only in 1997. Because the focus of this study is on changes in low income over time, it is important that definitions of income remain the same. For residents of Quebec, this means excluding provincial family allowance benefits for 1997. Including benefits for 1997 when they cannot be measured in 1993 would introduce a bias to the changes in income of provincial families since any provincial family allowance benefits in 1997 would be measured as an increase in income.

For residents of other provinces, however, this means including these benefits for 1997 since for those families they represent new programs offering additional incomes to families.

Rural areas: the regions outside census metropolitan areas (CMAs) and census agglomerations (CAs). CMA and CA codes have been matched to the T1FF using a postal code conversion to yield a highly accurate locational identifier.

Small/medium urban areas: CMAs or CAs with less than 500,000 residents.

Large urban areas: CMAs or CAs with more than 500,000 residents.

Market income: total earnings (from paid employment or self-employment), investment income, retirement income (private pension plan) and "other income." It excludes government transfers.

Government transfers: all direct payments to individuals and families by the federal, provincial and municipal governments: Old Age Security pensions, the Guaranteed Income Supplement, Spouse's Allowance, Canada and Quebec Pension Plan benefits, Child Tax Benefits, Employment Insurance benefits, workers' compensation benefits, credits for the GST/HST, provincial or territorial refundable tax credits, social assistance payments and other government payments. For all provinces except Quebec this included provincial family allowance benefits. These benefits were excluded for Quebec because of data unavailability for 1993.

Total income: income from all sources before deduction of federal and provincial taxes, that is, market income plus government transfer payments.

Income tax: total federal and provincial taxes on income and capital gains in a given year.

After-tax income: total income minus income taxes.

The overall level of low income intensity increased between 1993 and 1997 (Chart A). Over the period, low income intensity rose by 9.9% (Table 1). A substantial fraction of this rise was due to an increase in the low income gap. Roughly speaking, the growth in low income intensity equals the growth in the low income rate plus the growth in the gap. Thus, about one-third of the rise in low income intensity was due to an increase in the gap, the remainder due to an increase in the rate.

What lay behind the increase in low income intensity? Did low income families receive less income from market sources, or did transfers decline?³ This can be answered by considering changes in incomes by source for the population of families at risk of being in low income—that is, families whose market incomes were below the low income cutoff based on income after

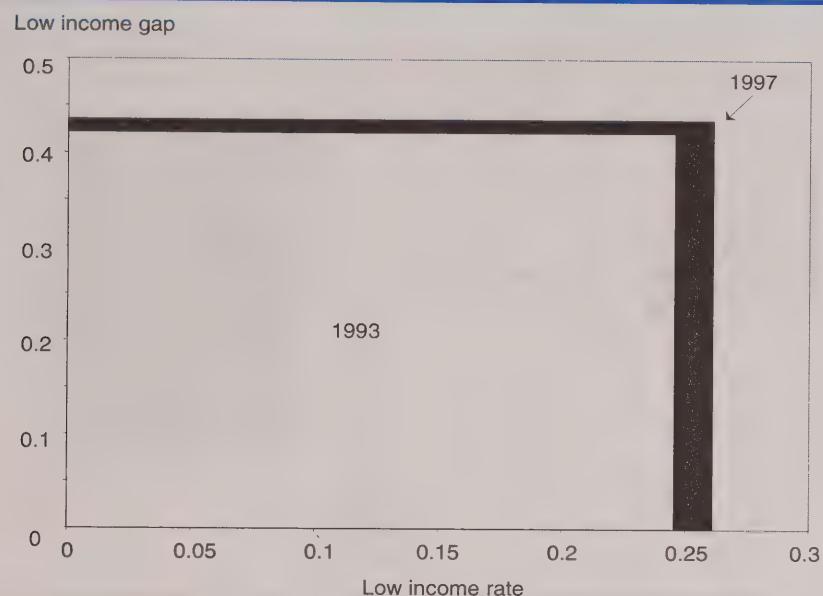
Table 1: Low income rate, gap and intensity

	Rate	Gap	Intensity
1993	0.245	0.422	0.191
1997	0.262	0.437	0.210
Change (%)	6.8	3.5	9.9

Source: T1 Family File

tax (LICO-IAT). These 'low market income families' are families whose income from market sources does not surpass the cutoff—although some of these families may not be in low income after income from transfers is factored in. Changes in the amount and composition of income for this group shed light on

Chart A: Overall, low income intensity increased between 1993 and 1997.



Source: T1 Family File

the relative contribution of market and transfer incomes to the low income rate and gap, and hence low income intensity.

After tax income fell by \$1,300 between 1993 and 1997 for families with low market income (Table 2). The largest contributor to this decline was the \$1,100 drop

in EI benefits received by these families. Social assistance also fell (-\$500), whereas other transfers rose slightly. Market earnings were virtually unchanged. The lack of increase in market earnings is surprising given the GDP growth enjoyed over this period, and suggests that families not in low income benefited more from this growth.

Table 2: Average income of individuals and families with market income below LICO-IAT

	Market earnings	El benefits	Social assistance	Other transfers	Taxes	After tax income	LICO-IAT
\$							
1993	5,613	1,983	3,351	2,406	546	12,807	16,716
1997	5,652	872	2,867	2,500	396	11,494	16,732
Change	39	-1,111	-485	94	-149	-1,313	16

Source: T1 Family File

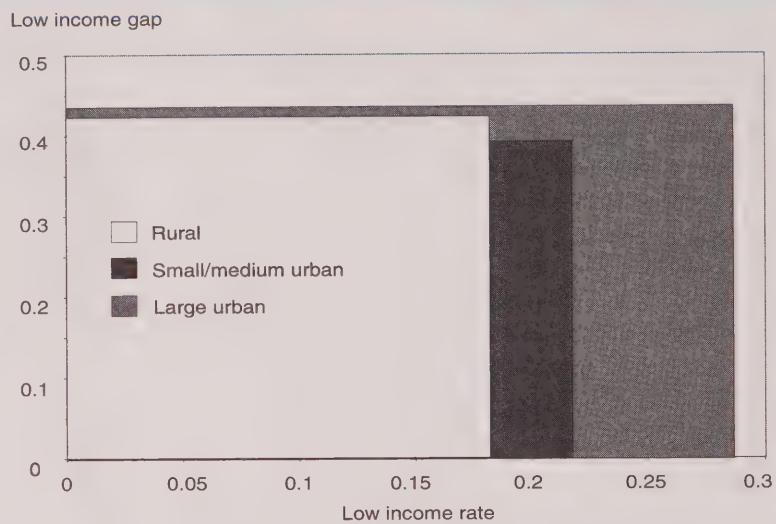
The preceding discussion shows that low income intensity is useful for two reasons. First, it is a more complete indicator of income deprivation among low income families than the traditional 'head-count' represented by the low income rate. The rate tells only part of the story, and important changes in incomes among low income families can be missed by focusing only on changes in the rate. Second, low income intensity can be useful for evaluating programs targeted at low income Canadians. Changes in the economic well-being of low income families may be missed by the low income rate, but they are always registered in measures of low income intensity (see also Myles and Picot, 2000).⁴

Low income intensity among rural and urban families

In 1993, low income intensity was lowest in rural communities at 0.145 (Table 3), and rose with urbanization class. In large urban areas, low income intensity was 0.226 (Chart B). Why this difference? Mainly, it occurred because the low income rate was higher in more urbanized areas. The low income rate was 0.182 in rural areas and 0.286 in large urban areas. There was much less difference in the low income gap. The average family in low income was 42.2% below the LICO-IAT in rural areas, and 43.5% below in large urban areas. Smaller urban areas had a lower gap than either the large urban or rural areas, but their low income rate fell between the two. The difference in low income rates between community sizes was primarily due to differences in expenditures on necessities (see *Comparing rural and urban Canadians*).

In absolute terms, low income intensity grew almost equally between 1993 and 1997 in each community size: 1.9 percentage points in rural areas, 1.9 points in small/medium urban areas, and 1.8 points in large urban areas (Chart C). However, since rural areas were growing from a smaller initial level, their percentage growth was higher: 13.1%, compared with 11.9% in small/medium urban areas, and 8.0% in large urban areas. These increases were driven in part by a rise in the low income rate, plus an increase in the low income gap. In rural areas and small/medium urban areas the increase in the rate was more important; in large urban areas increases in the rate and the gap played approximately equal roles. Again, increases in the low income rate understated the size of increases in the income deprivation faced by low income families. Over the 1993-to-1997 period, the low income population not

Chart B: In 1993, low income intensity was greatest in large urban areas.



Source: T1 Family File

Table 3: Low income among non-elderly families, by area size

	Rate	Gap	Intensity
Rural			
1993	0.182	0.422	0.145
1997	0.199	0.438	0.164
Change (%)	9.3	3.8	13.1
Small/medium urban			
1993	0.217	0.393	0.160
1997	0.240	0.403	0.179
Change (%)	10.6	2.5	11.9
Large urban			
1993	0.286	0.435	0.226
1997	0.299	0.451	0.244
Change (%)	4.5	3.7	8.0

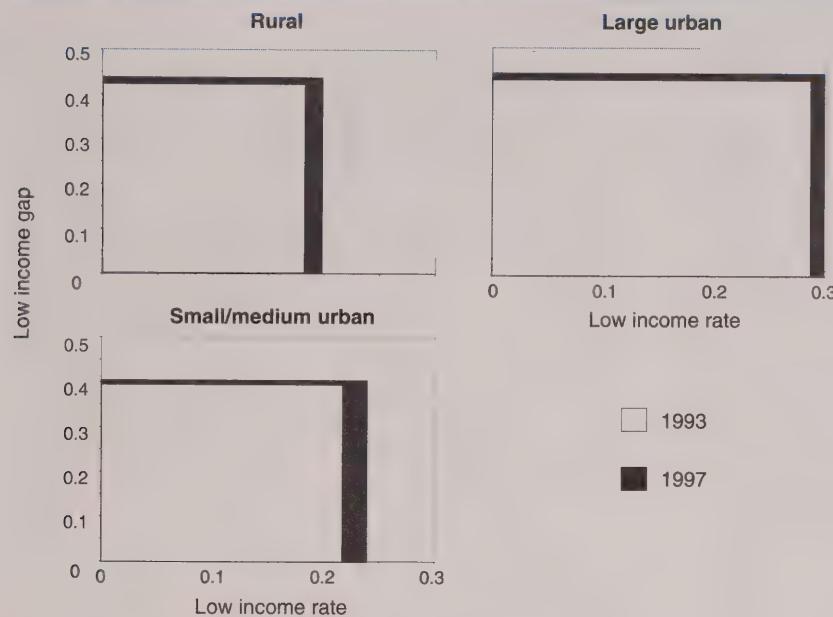
Source: T1 Family File

only increased, but it also became economically worse off—which would not have been apparent from the low income rate.

Income by source

Low income intensity rose for both urban and rural families between 1993 and 1997. How did incomes change over the period? Net income for low market income families fell by \$1,800 in rural areas, \$1,500 in small/medium urban areas, and \$1,000 for families in large urban areas (Table 4). The largest single contributor to the decline was a large drop in EI benefits. These fell by \$1,600 for rural families, by \$1,100 in small/medium sized urban areas and by \$900 in large urban areas. At the same time, average market earnings failed to rise substantially, despite increases in aggregate real GDP. Real market earnings fell by \$200 for low market income families in rural areas and small/medium urban areas, but rose marginally (\$200) in large urban areas.

Chart C: Between 1993 and 1997, low income intensity increased in all size regions.



Source: T1 Family File

income intensity rose for these families between 1993 and 1997 (Table 5). Low income intensity rose less for farm than non-farm families, but, because of its lower initial rate, the percentage growth was about the same. For farm families, rising low income intensity was associated with declines in EI and market income (Table 6).⁵

Provincial differences

Social assistance falls under provincial and local jurisdiction and these programs differ substantially in terms of eligibility and benefit rates. And eligibility for EI depends upon local unemployment rates, which differ between and within provinces.

Declines in EI income were most important for rural low market income families, particularly those in the Atlantic provinces, as

Social assistance also declined, particularly in urban areas. Although other transfers did increase, the amounts were not large enough to offset the declines in EI and social assistance. Total transfers fell about equally in percentage terms for each type of area: 20% in rural areas, 17% in small/medium urban areas, and 20% in large urban areas. Because transfers made up a larger part of net income for low market income families in rural and small/medium urban areas, the same proportional decrease in transfers had a larger effect on net income for these families.

Farm families

Farm families are those with more than \$10,000 of gross income from unincorporated farms. Low

Table 4: Average income of individuals and families with market income below LICO-IAT

	Market earnings	El benefits	Social assistance	Other transfers	Taxes	After tax income	LICO-IAT
Rural							
1993	4,360	2,870	2,969	2,832	486	12,545	13,084
1997	4,123	1,277	2,677	2,947	276	10,748	12,874
Change	-237	-1,593	-292	115	-210	-1,797	-210
Small/medium urban							
1993	5,079	1,916	4,007	2,597	493	13,106	15,614
1997	4,914	855	3,497	2,686	335	11,617	15,476
Change	-166	-1,061	-510	89	-158	-1,489	-138
Large urban							
1993	6,379	1,673	3,156	2,140	596	12,752	18,705
1997	6,584	730	2,622	2,242	471	11,707	18,782
Change	204	-943	-534	102	-125	-1,045	77

Source: T1 Family File

Low income cutoffs

Low income cutoffs (LICOs) were established using data from the Family Expenditure Survey, which covered approximately 14,000 households. It was conducted periodically from 1955 to 1996 when it was replaced by the annual Survey of Household Spending. Between surveys, low income cutoffs were adjusted for inflation using the consumer price index.

This study uses 1992 LICOs based on income after tax (LICO-IATs) to measure low income. These are defined as the after-tax income level at which an economic family spends 20% more than the average family of similar size and area of residence (urbanization) on necessities (food, shelter and clothing). Although LICOs are often referred to as poverty lines, they have no official status as such, and Statistics Canada does not recommend their use for this purpose.¹

LICO-IATs are based on family size and urban class. For example, in 1993 for a family with three members, the LICO-IAT was \$13,773 in rural areas and \$21,007 in large urban areas. The difference arises because the average three-person family in a large urban area spends a higher fraction of its income on necessities. Persons with after-tax income below the LICO-IAT for their family size and area size class are defined to be in low income.

Table 5: Low income among farm families

	Rate	Gap	Intensity
1993	0.113	0.260	0.057
1997	0.119	0.277	0.064
Change (%)	5.3	6.5	12.3

Source: T1 Family File

well as in Quebec and British Columbia (Chart D). EI declined for other provinces and areas, but substantially less (relative to the LICO-IAT). In the Atlantic rural areas, EI dropped by 20.5% of the LICO-IAT in Prince Edward Island, 19.0% in Newfoundland, 16.4% in New Brunswick, and 8.5% in Nova Scotia.

Declines in social assistance income were most important for low market income families in

Ontario, Alberta and British Columbia. Compared with changes in EI, changes in social assistance were smaller and less differentiated by area, although declines appeared slightly smaller the larger the urban area. Social assistance rose in Newfoundland, but changed little in other provinces. Social assistance fell by 4.2% of the LICO-IAT in rural Ontario, 4.1% in rural Alberta, 3.4% in rural British Columbia, 4.3% and 3.3% in small/medium urban areas in Ontario and Alberta respectively, and 3.2% in large urban areas in Ontario. Other declines were less than 3%. The introduction of family allowance in British Columbia served to offset declines in social assistance.⁶ Also, market incomes fell or rose very little in most provinces, except Alberta (up \$400).

Why do changes in transfers affect rural low-income families more?

In all communities, increases in low income intensity were associated with little increase in market income and declining transfer payments. Changes in transfers particularly affected rural low income families. For all levels of after tax income, families in rural communities received a larger proportion from transfers than families in large urban areas (Chart E). And, at the levels of income given by the LICO-IATs, a rural family received a 60% larger proportion of income from transfers than did a family in a large urban area. This is because of differences in both the cutoff level and the average fraction of income received from transfers at all levels of income. The former appears to have been more important.

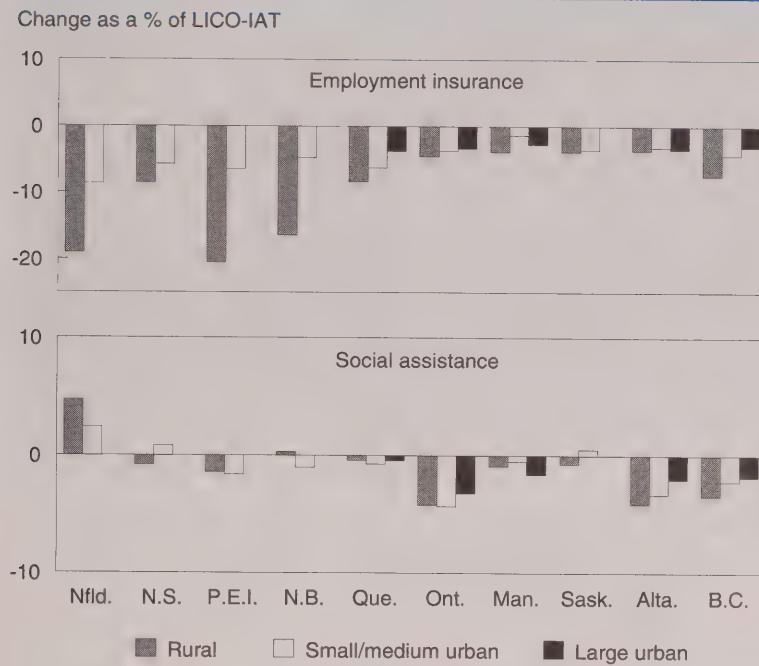
This means that, other things being equal, for a given change in transfers, low income families in rural areas were affected more than those in urban areas. This

Table 6: Average income of farm families with market income below LICO-IAT

	Market earnings	EI benefits	Social assistance	Other transfers	Taxes	After tax income	LICO-IAT
\$							
1993	10,494	1,519	226	3,712	279	15,673	16,279
1997	10,192	752	142	3,873	259	14,700	16,192
Change	-302	-767	-85	161	-20	-973	-87

Source: T1 Family File

Chart D: EI declines affected the Atlantic provinces the most.



Source: T1 Family File

Note: Changes in these transfers have been standardized by dividing them by the average LICO-IAT observed in the two years (1993 and 1997). Thus, values given are the change in transfer income received as a fraction of the low income cutoff for an average family with low market income.

was more because of differences in the level of the low income cutoffs, and less because rural families were more dependent on transfers (at any given level of income).

Conclusion

Low income intensity is a useful indicator for describing trends in low income. Unlike the low income rate, it is sensitive to changes in the amount of income received by low income families, not just whether or not they fall below a low income threshold. From 1993 to 1997, low income intensity showed larger increases in low income than did the low income rate.

The increases in low income were related to a decline in transfers received by low income families. But the decline in transfers was only half the story. Also important was the slow growth in market earnings despite a generally improving economy.

In absolute terms, low income intensity increased equally for rural and urban families between 1993 and 1997. However, since it was growing from a lower base, the percentage growth was higher in rural areas. Associated with the rising low income intensity was little or no increase in market income and a decline in total transfer payments, especially EI benefits

received by low income families. Transfers to families appear to have declined by a similar percentage for both urban and rural low income families, but because the latter received a greater fraction of income from transfers, the change affected them more than urban families. Low income intensity also rose for rural farm families. The EI shortfall was greatest in the Atlantic provinces, while social assistance dropped the most in Ontario, Alberta and British Columbia. Market earnings rose for families in Alberta and transfers from other sources (mainly family allowance benefits) rose for British Columbia families.

The ability to identify the importance of EI or social assistance in this change in low income intensity is limited in this study, and no conclusions can be drawn regarding the effect of changes in these programs on low income intensity. The analysis of the effect of all transfers is done in a 'first order' sense only, and this paper does not try to account for behavioural responses (possibly significant) to changes in a program.⁷

The years 1993 to 1997 reflected sluggish, but improving, economic conditions. Between 1993 and 1997, the unemployment rate fell from 11.4% to 9.1%.⁸ As economic conditions improve, transfer payments could normally be expected to decline and market incomes to rise. However, the latter did not happen for families in low income. Nevertheless, the length of recession and the slow pace of recovery suggests that exhaustion of EI benefits and difficulty obtaining the minimum hours of work required to qualify for EI might have been an ongoing problem. In other words, the drop in EI received by low income families may have been due to a change in the program, or it might have happened even in the absence of changes to EI.⁹ Atlantic Canadians in particular had difficulty meeting minimum entrance requirements and were more likely to exhaust benefits in 1997 (HRDC, 1998b).

T1FF and the official Statistics Canada low income estimates

Low income rates computed using the T1 Family File (T1FF) compare favourably with those using the Survey of Consumer Finances (SCF). Low income rates computed using the T1FF tend to be about 5 percentage points higher, but otherwise fit closely with official rates. On average, changes in low income rates in the T1FF between 1993 and 1997 understated those in the SCF, T1FF growth rates being about 40% lower. In terms of ranking and qualitative comparisons, changes in low income rates also compared well between the T1FF and the official series.

One reason for the higher T1FF rates may be differences in family structure used by the two surveys. The T1FF uses **census families**, which comprise a couple and any unmarried children living in the same dwelling unit, or a lone parent with unmarried children. The SCF uses the **economic family**, which is a group of individuals sharing a common dwelling unit and related by blood, marriage or

adoption. Economic families may comprise two or more census families. Census families will tend to be smaller, and to have lower income.

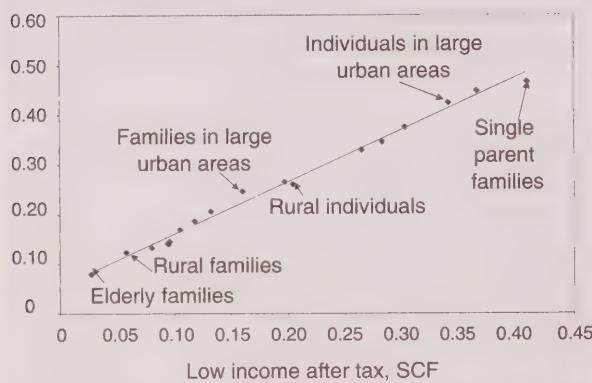
A second reason is coverage. The SCF excludes the population on reserves, in the military, and in institutions, while the T1FF does not.

A third possibility is that the grouping of families into urban size classes may be slightly different between the two sources.

Although the rates are higher using the T1FF, the relative ranking of different family types and urbanization areas suggests that these rates are reasonable. This is particularly true for the purposes of this study, where the main interest is in examining changes over the 1993 to 1997 period, rather than discussing differences in levels.

Incidence of low income, 1997

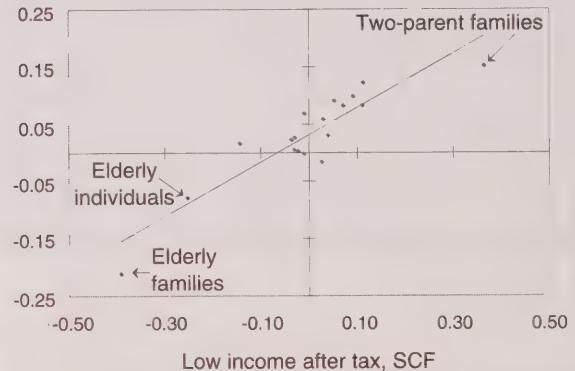
Low income after tax, T1FF



Note: Only selected family types have been highlighted.

Change in incidence of low income, 1993 to 1997

Low income after tax, T1FF



Note: Only selected family types have been highlighted.

Other research has shown that the slow growth and program changes may both have played roles over this period. Between 1994 and 1997, low income intensity also rose in the United States. Provincial and state jurisdictions that saw less deterioration in macroeconomic conditions (like employment and unemployment), and unemployment insurance and social assistance benefits and eligibility over this period saw a smaller rise in low income (Osberg, 2000).

Equally as interesting as understanding why transfers fell for low income families in 1997 relative to 1993 is understanding why market incomes among low

income families failed to rise in response to (slow) economic growth. Aggregate growth seen between these years appears not to have benefited families below the low income cutoffs. This is important because escaping from low income depends, in part, on finding employment. Getting or losing a job or a change in the number of earners in a family tends to have a major influence on moving in or out of low income (Picot, Zyblock and Pyper, 1999). Furthermore, small changes in the unemployment rate when unemployment is high may do little to affect the employment probabilities of low income persons. Just as persistently low unemployment in the 1990s contributed to

Comparing rural and urban Canadians

Families are defined as in low income when their after tax income falls below the low income after tax cutoff line (LICO-IAT) for families of the same size and urban class. These cutoffs rise with family size and urbanization (see Catalogue no. 13-592-XIB). Because larger families spend more on necessities than smaller families, they require more income to exceed the cutoff. And, on average, urban families spend more of their income on necessities. The distributions of incomes for urban and rural families are nearly identical in the lower half of the scale, so low income rates are higher in large urban areas not because incomes are lower there, but because expenditures

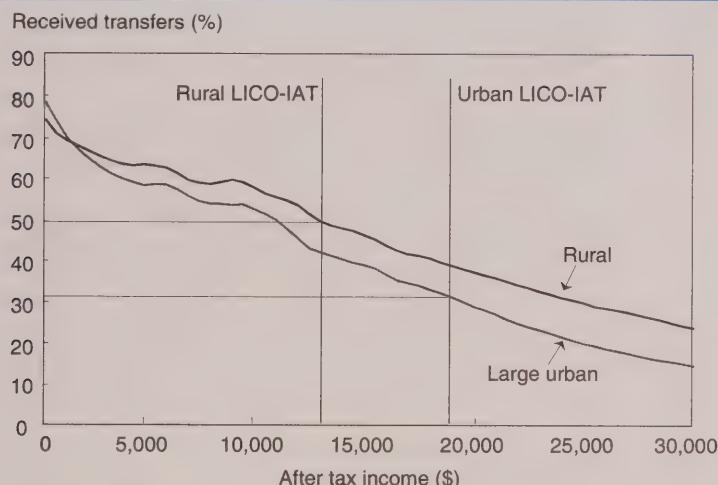
on necessities—particularly shelter—are higher. Hence the cutoff is higher for this group, and in turn, the fraction of families falling below the cutoff is greater (Heisz, 2001).

One common criticism of the LICO methodology is that it focuses on gross expenses for food, shelter and clothing, which will differ between rural and urban Canada because of price differences, quality differences and quantity differences. Hence, the low income population in different urbanization classes may not have the same standard of living. Differences between groups may be over or under stated using different low income measures. This is one motivation for the move

towards establishing a “market basket measure” of low income (HRDC, 1998a). For this reason, this paper highlights changes in low income over time, and not differences between groups.

Some analysts have also criticised the methodology underlying the computation of the LICOs for making differences between urban and rural LICOs too large (for example, Wolfson and Evans, 1989). However, using LICO-IATs that are closer together shows that the main conclusions are not affected by the amount of difference in the LICOs (Heisz, 2001).

Chart E: For virtually all levels of income, transfer payments were more important for rural families.



Source: T1 Family File

improving the earnings of Americans at the bottom of the wage distribution (Mishel, Bernstein and Schmitt, 2001), several consecutive years of sustained growth and low unemployment—from 1997 through (at least) 2000—may serve to improve the market earnings of low income families in Canada.

Perspectives

Notes

1 For a detailed explanation, see “On poverty and low income,” by I.P. Fellegi (Catalogue no. 13F0027XIE). This article is available on Statistics Canada’s website (www.statcan.ca), under “Products and services,” “Research papers (free),” “Personal finance and household finance.”

2 Inequality is defined as $1 + G(X)$ where $G(X)$ is the Gini coefficient of low income gaps. The Gini is a measure of inequality that ranges between zero and one, getting closer to one as inequality becomes higher. In terms of inequality in the gap, most families have a gap of zero, so empirically, $G(X)$ is usually close to one—a relatively few families compose most of the low income gap. Families above the low income cutoff have gaps set to zero. Thus $1 + G(X)$ is close to two in most cases. Low income intensity is proportionate to the product of the rate and the gap. The low income gap is the average ratio of the income shortfall to the LICO-IAT for low income families.

3 Changes in taxes are also possible contributors.

4 Myles and Picot examined low income intensity among families with children. They used a different data source, but also found an increase in low income between 1993 and 1996, as a result of no increase in market earnings and decreases in EI and social assistance.

5 Farmers cannot qualify for EI on the basis of their farm income. EI for farm families must be associated with off-farm income by family members.

6 The British Columbia Family Bonus is a refundable tax credit commencing in July 1996 that extends the child tax benefit for residents of British Columbia. Provincial family allowance benefits for Alberta and New Brunswick are also included for 1997.

7 Changes to the UI/EI system from 1993 to 1997 include Bill C-113 (effective April 4, 1993) after which quits became disqualified from benefits; Bill C-17 (effective July 7, 1994) which raised the variable entrance requirement and raised the replacement rate for low earning claimants and claimants with families while lowering it for others; and Bill C-12 (effective July 1, 1996) which renamed UI to EI, introduced a declining scale of replacement rates for repeat users, and dropped maximum insurable earnings from \$845 to \$750.

8 Real GDP growth was: 1993: 2.3%, 1994: 4.7%, 1995: 2.8%, 1996: 1.5%, 1997: 4.4%. Unemployment rates were: 1993: 11.4%, 1994: 10.4%, 1995: 9.4%, 1996: 9.6%, 1997: 9.1%.

9 Research examining the declining EI beneficiaries to unemployed (B/U) ratio concludes that about one-half of the drop in this ratio over the 1990s was due to changes in the EI program, while another half was due to other changes like the duration of unemployment, and the difficulty workers had obtaining the minimum hours to qualify (HRDC, 1998b; Sargent, 1998).

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Liberal arts degrees and the labour market

Philip Giles and Torben Drewes

THE PERCEPTION OF TECHNOLOGY as a principal driver in economic change and widely publicized reports of skill shortages in the information technology sector have focused attention on the ability of the postsecondary sector to produce graduates in advanced technology fields. Within this context, a debate has emerged about the labour market value of the traditional liberal arts and science programming that has been a mainstay of universities.

In one view, future economic growth is jeopardized by the failure of Canadian universities to supply sufficient numbers of technically skilled graduates. Typically, the argument is not that university enrolment is too low but, rather, that the program balance is incorrect. In 1998, approximately 39% of university degrees granted were in social sciences while only 7% were in engineering and applied sciences. Twice as many degrees were granted in the humanities (12%) as in mathematics and physical sciences (6%).

In the alternative view, postsecondary education should not be judged solely on its ability to prepare students for the labour market—but even if it is, graduates in humanities and social sciences possess the problem-solving, interpersonal, communications, and learning skills that employers claim are needed in the emerging economy.

Because universities are a primary source of highly skilled labour, graduating almost 150,000 people annually, the match between their enrolment patterns and the needs of the labour market is important—not only for the economy, but also for the graduates. With \$12.1 billion spent in 1997-1998 in the university system, a mismatch between labour market requirements and enrolment patterns may result in a significant efficiency loss. By the same token, a similar loss may

occur if universities respond to the increasing use of program-specific funding incentives by provinces and alter a program mix that is already well-matched to labour market needs.

Surprisingly little empirical evidence is available on the relative labour market performance of university graduates from different programs. One study, which compared unemployment rates and annual incomes of university graduates in the humanities and social sciences to those of their counterparts in more applied streams, found the labour market performance of the graduates to be roughly similar (Allen, 1998). This result was confirmed by another study, which found that in 1992, two years after graduation, the unemployment rate for bachelor's graduates in humanities and social sciences was the same as the rate for engineering graduates and four percentage points lower than for applied sciences graduates (Lavoie and Finnie, 1999). Their mean annual earnings exceeded the earnings of pure and applied science graduates. An examination of rates of return by field of study found considerable variation within each field, as well as between the six fields used (Appleby et al). These variations make generalizations difficult, but median rates of return appear to be lowest for arts and humanities and highest for health-related fields of study. Rates for administration and social sciences appear quite similar to those for chemistry, physical and natural sciences, but both fall below architecture and engineering.

This article used the Survey of Labour and Income Dynamics (SLID) to look at the labour market experiences of graduates of bachelor's level programs. SLID offers rich detail on the labour market experiences of individuals from the beginning of 1993, and its longitudinal design is ideally suited for tracking changes over time (see *Data source and definitions*). Some undergraduate programs are vocational in nature, with a close association between skills taught and skill sets required in identifiable occupations, and prepare students for immediate entry into these occupations upon

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Data source and definitions

The **Survey of Labour and Income Dynamics**, a longitudinal household survey, began in January 1993. Every three years, approximately 15,000 households enter the survey. Over a six-year period, each household completes two detailed questionnaires annually, one on labour market activity and another on income. The data used in this article are for five years, 1993 to 1997.

The study was limited to bachelor's level graduates who had obtained their degree by January 1, 1993. Of the 1,446 individuals, 59% were from humanities and social sciences and the rest were from more applied programs. The two groups are similar in a number of important labour market variables, including age and years of work experience (measured in full-year, full-time equivalents). They differ sharply, however, in their proportions of men and women, which has to be taken into account in making labour market comparisons.

Information was collected on all jobs held during any year, to a maximum of three jobs in 1993, and six in each of the following years. In cases where jobs overlapped, a main job was identified based on hours worked. In order to focus on job transitions, the analysis was restricted to main jobs for each of the 60 months. This yielded 1,174 jobs for the liberal arts and sciences group and 856 jobs for the applied programs group.

Field of study for undergraduate degree uses Statistic Canada's standard classification. Humanities and social sciences comprises studies in education, recreation and counselling services; fine and applied arts; humanities and related fields; and social science and related fields. The applied programs group includes commerce, management and business administration; agriculture and biological sciences and technology; engineering and applied sciences; engineering and applied science technologies and trades; health professions, science and technology; and mathematics and physical sciences.

Reasons for job separation

Personal: Own illness or disability (work or non-work related), caring for own children or elder relatives, other personal or family responsibilities, school, retirement.

Job-related: Found new job, poor pay, not enough or too many hours, poor physical conditions, sexual harassment, personnel conflict, work too stressful, to concentrate on other job.

Involuntary: Company moved or went out of business, seasonal nature of job, layoff/business non-seasonal slowdown, labour dispute, dismissal by employer, temporary job/contract ended.

Other: Other, don't know.

graduation. Humanities and social sciences, on the other hand, focus more on the development of generic skills such as communications and analytical reasoning than on occupational preparation. Such skills, however, may permit a greater degree of mobility between labour market sectors. One would then expect to see differences in occupational mobility, wage growth, and human capital acquisition between the two groups of graduates, particularly for more recent labour market entrants.

Several dimensions of labour market experience were examined. Graduates at the bachelor's level in the more vocationally oriented educational fields enjoyed an hourly wage premium over their humanities and social sciences counterparts. For women in the former group, however, this premium may be offset by longer and more frequent periods of unemployment. And the skills of the humanities and social sciences group appeared to allow a greater ability to move across industries and occupations.

Characteristics of graduates and their jobs

Almost one-quarter of the jobs held by graduates in humanities and social sciences were in educational services, more than double the concentration in trade, the next largest industry of employment (Table 1). The single largest concentration of jobs held by graduates in applied programs was in professional, scientific and technical services, but the concentration was much lower (17% versus 23%). For this group, three other industries stood out: public administration, health care and social assistance, and finance, insurance, real estate and leasing.¹

By occupation, 30% of jobs held by the humanities and social sciences group were classified as social science, education, government service and religion. In fact, 19% of humanities and social sciences graduates were teachers and professors. Once occupations in business, finance and administration are included, over 50% of the jobs held by the humanities and social sciences group were accounted for. The applied programs group shows a broadly similar representation

Table 1: Personal and job characteristics

	Humanities	Applied programs
Personal characteristics		
Sample size	847	599
Mean age at January 1, 1993	37.3	38.4
Mean years of full-year, full-time equivalent work experience	12.2	12.7
Proportion of women (%)	56.8	40.5
Job characteristics		
Number of jobs in sample	1,174	856
Industry		
Educational services	23.4	6.8
Public administration	9.6	12.2
Trade	10.4	9.4
Professional, scientific and technical services	9.2	16.6
Health care and social assistance	7.0	11.6
Information, culture and recreation	7.7	--
Finance, insurance, real estate and leasing	10.1	11.6
Manufacturing	--	10.7
Other	22.6	21.2
Occupation		
Management	14.3	17.8
Business, finance and administrative	23.6	19.9
Natural and applied sciences and related	--	25.2
Health	--	11.8
Social science, education, government and religion	30.1	--
Art, culture, recreation and sport	7.8	--
Sales and service	14.8	10.8
Other	9.5	14.5

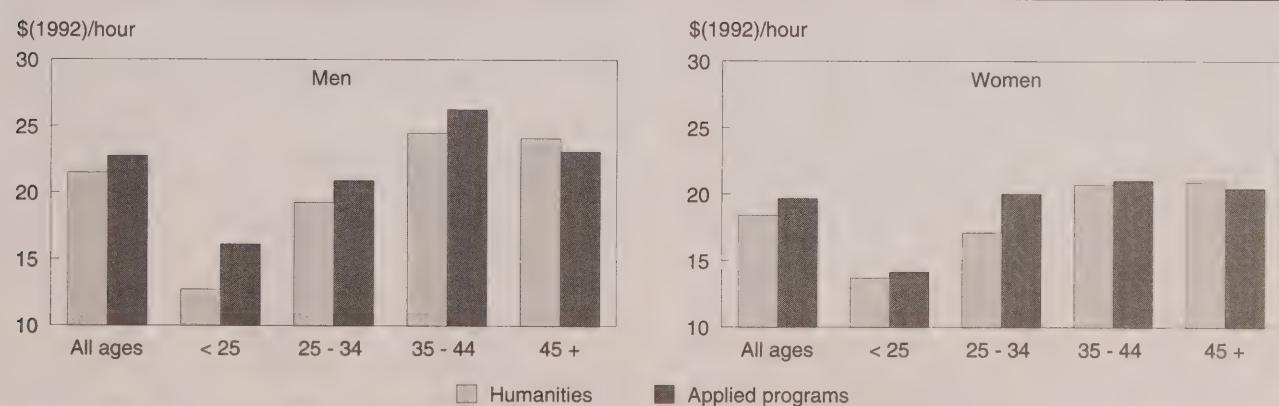
Source: Survey of Labour and Income Dynamics, 1993-1997

in management and in business, finance, and administrative occupations. The difference in occupational distributions between humanities and social sciences and applied programs graduates is due primarily to educational and government service, natural and applied science, and health occupations.

How do wage rates compare?

While both groups received substantial average hourly wages, wage rates for applied programs graduates were about 6% higher for both men and women (Chart A).² Since the sample was restricted to individuals whose highest educational attainment was at the bachelor's level, the wage difference cannot be attributed to medical professionals in the applied programs group. However, a simple comparison of means may be misleading. With significant variation in wages across individuals, many humanities and social sciences graduates earned a wage rate higher than the mean in the applied programs group.

The wage advantage enjoyed by the applied programs graduates declined with age and actually reversed for those 45 and older, a pattern also found by Allen (1998) in his analysis of annual earnings. This is consistent with the hypothesis that skills acquired in humanities and social sciences programs allow a relatively greater accumulation of human capital after formal schooling. It may also be that, with a less direct connection between humanities and social sciences programs and occupational skill needs, graduates of these programs took longer to find their career path.

Chart A: The wage advantage for applied programs graduates reversed for persons 45 and older.

Source: Survey of Labour and Income Dynamics, 1993-1997

To provide an overall sense of wage differentials, the natural logarithm of available hourly wage observations was regressed against a categorical variable set to 1 for humanities and social sciences graduates and to 0 for others. Controls for sex, years of full-year full-time experience, job tenure, marital status, and province of residence were added (Table 2). The resulting coefficients can be interpreted as the proportional effect of a unit change in the explanatory variable. Thus, each year of experience increased the hourly wage by an average of 0.87% (equation 1). Humanities and social sciences wage rates were lower than applied programs rates by an average of 9.5% once controls for sex, experience, tenure, marital status and province were used. To obtain an estimate of the male/female wage gap within each group, separate wage regressions were run for each educational category with a dummy variable (0 = male, 1 = female). The male/female wage gap was larger in the applied programs group, where women's hourly wage rates averaged almost 16% less than men's (equation 3), compared with 7.5% in the humanities and social sciences group (equation 2).

How do unemployment experiences compare?

Although the wage rates of older humanities and social sciences graduates matched or exceeded those of their applied programs counterparts, the return on their education was likely lower. How then can the continued popularity of the former programs be reconciled with models of rational economic decision-making? One answer may be to invoke the portfolio choice paradigm of financial investment, which postulates that a lower expected return on investment is willingly accepted for reduced risk. If the generic skills acquired in humanities and social sciences programs carry a wider currency in the labour market, they may permit a greater degree of mobility between employers and between occupations or industries, lessening unemployment risk. Depending on personal attitudes towards risk, an individual may well regard a lower return as a price to be willingly paid to avoid the risk of investing in occupation-specific skills that could be rendered obsolete by future trade or technology shocks.

To examine this issue, the unemployment experiences of the two groups were compared. Doing so also addresses more directly the 'employability' debate over the relevance of an education in the humanities and social sciences.

Table 2: Wage equation estimates

Dependent variable: $\ln(\text{wage})$	Equation 1 All programs	Equation 2 Liberal arts	Equation 3 Applied programs
Constant	2.84 (0.030)	2.70 (0.040)	2.96 (0.044)
Humanities	-0.095 (0.012)		
Sex	-0.115 (0.012)	-0.075 (0.015)	-0.156 (0.018)
Experience	0.0087 (0.001)	0.007 (0.001)	0.010 (0.001)
Job tenure	0.0008 (0.0001)	0.001 (0.0001)	0.0007 (0.0001)
<i>R</i> ²	0.17	0.16	0.16

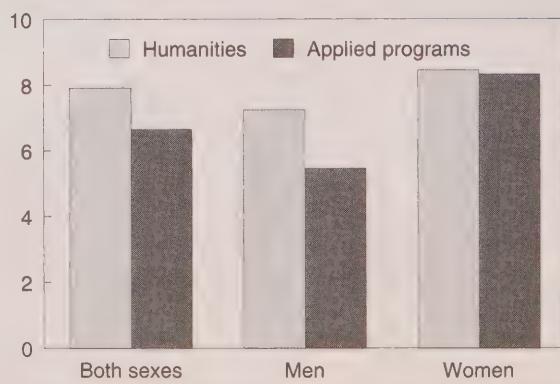
Source: Survey of Labour and Income Dynamics, 1993-1997

Note: Estimates for provincial dummy variables not reported.
(Standard errors in parentheses).

SLID provides a number of different perspectives on unemployment, including total weeks of unemployment during the survey period. Over the 260 weeks from January 1993 to December 1997, the humanities and social sciences group averaged over one week more of unemployment than the applied programs graduates did (Chart B). The difference was almost entirely due to higher unemployment among humanities and social sciences men.

Chart B: Men from the humanities tended to be unemployed longer than their applied programs counterparts.

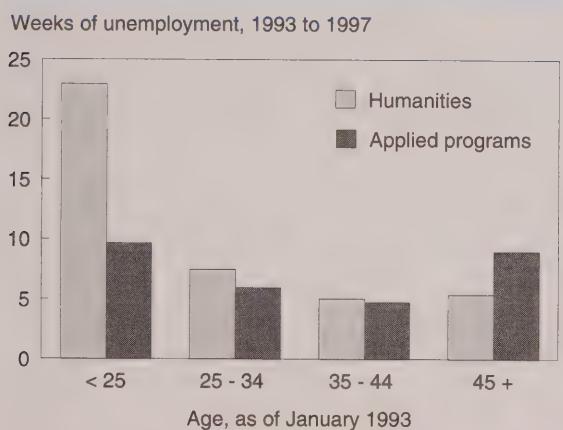
Weeks of unemployment, 1993 to 1997



Source: Survey of Labour and Income Dynamics

The unemployment difference was particularly striking among young workers (Chart C). Graduates of humanities and social sciences programs appeared to have a more difficult transition into the labour market than their applied programs counterparts. Generally speaking, humanities and social sciences programs do not offer a direct connection to a well-identified occupation so graduates may spend more time experimenting with jobs—and facing the consequent periods of unemployment in between. Once they were established in the labour market, however, their unemployment experience compared favourably. Indeed, after age 45 humanities and social sciences graduates faced fewer average weeks of unemployment than did members of the applied programs group, a pattern that reinforces the suggestion of labour market advantages to humanities and social sciences programs in the longer term.

Chart C: Young humanities graduates were unemployed far longer.



Source: Survey of Labour and Income Dynamics

sciences men. This, together with a higher incidence, was consistent with their greater number of weeks of unemployment (7.2 weeks, compared with 5.5 weeks).

For women, however, the story was quite different. Applied programs women faced substantially longer spells of unemployment than did humanities and social sciences women or applied programs men. Humanities and social sciences women, on the other hand, had shorter spells than the men in their education group. The higher rates of unemployment among humanities and social sciences women compared with their male counterparts were attributable to a greater incidence of unemployment, whereas the same phenomenon among applied programs women and men was attributable to both a higher incidence and a longer duration.

The relative ability of humanities and social sciences graduates to avoid unemployment or to find work once unemployed presents a somewhat mixed message. Women in the two groups became unemployed at the same rate, but humanities and social sciences women exited significantly more quickly. Male humanities and social sciences graduates experienced unemployment more frequently and took longer to

Table 3: Incidence and duration of unemployment

	Humanities		Applied programs	
	Men	Women	Men	Women
Incidence				
Spells per person	0.42	0.57	0.34	0.57
Proportion affected	22.1	32.4	20.1	29.8
0 spells	77.9	67.6	79.9	70.2
1 spell	11.3	18.6	11.2	18.4
2 spells	5.8	7.8	5.9	6.8
3 or more spells	5.0	6.0	2.9	4.6
Duration				
Mean	16.3	15.3	15.4	21.9
Less than...				
8 weeks	39.8	47.1	51.3	46.2
16 weeks	69.4	68.6	70.9	63.1
26 weeks	85.0	80.9	84.1	71.0
52 weeks	95.6	93.0	94.4	87.4

Source: Survey of Labour and Income Dynamics, 1993-1997

find employment than applied programs men, although the difference in mean lengths was less than one week (16.3 versus 15.4).

Job mobility differs

If the human capital acquired by humanities graduates is more general, then they should have a greater ability to move between sectors of employment. Moreover, with a greater transferability of skills they should also be more willing to change sectors since attendant wage losses (if any) would be smaller. High rates of mobility could be regarded as either negative (job instability) or positive (opportunity for mobility). Looking at 'voluntary' job movements involving a change in occupation captures transitions that are more likely to test the transferability of skills, since a change in industry need not imply a change in the type of work done. (Transitions refer to any movement from one main job to another, with or without an intervening spell of unemployment. For an individual returning to a job after a period of employment in another, only one transition is recorded.)

The average number of job transitions during the five-year period was comparable, with the humanities and social sciences group recording slightly higher overall transition rates for both sexes (Table 4). The higher rate among young humanities and social sciences men indicates a difficult labour market transition, perhaps caused by the lack of a clear and direct link between their educational program and eventual vocation. By the middle age category (25 to 34), the transition probability for humanities and social sciences individuals was dramatically lower and below that for the applied programs group. However, this trend was reversed for the oldest of the age categories.

The higher proportion of job separations among both groups of women—the result of child care and other family responsibilities—accords with expectation. The job separations of women were also less likely to be job-related quits—a category that includes separations initiated by the employee (although these may not be entirely voluntary, involving as they do factors such as sexual harassment, poor working conditions or undesirable hours of work). Job transitions among humanities and social sciences men were less likely to be job-related and more likely to be involuntary than among applied programs men. Humanities and social sciences women also showed a greater likelihood of separations being involuntary, but, unlike their male counterparts, the proportion of job-related transitions

Table 4: Job mobility

	Humanities		Applied programs	
	Men	Women	Men	Women
Number of job transitions per person				
All ages	0.76	0.68	0.70	0.65
Under 25	2.24	1.16	1.15	1.33
25 to 34	0.84	0.79	0.98	0.85
35 and over	0.57	0.46	0.45	0.31
%				
Reason for job ending				
Personal reasons	4.2	10.3	4.1	8.0
Job-related quits	25.4	18.3	30.8	12.5
Involuntary	22.9	23.1	17.3	11.9
Other	13.2	11.1	7.6	19.5
Not reported	34.3	37.2	40.2	48.1
Change in...				
Industry	64.6	61.9	55.6	52.6
Occupation	64.6	60.5	55.4	51.6

Source: Survey of Labour and Income Dynamics, 1993-1997

was also higher. The high proportion of transitions taking place without a reported reason makes it difficult to draw firm conclusions about the relative ability of individuals in the two groups to choose to move between jobs.

The proportion of job changes taking place across industry or occupational sectors is more accurately measured and, for both sexes, humanities and social sciences individuals had significantly higher incidences of sector changes. This may reflect an enhanced ability on their part to transfer human capital across those sectors. The rates of change appear extraordinarily high, but these percentages apply only to job transitions, not to the entire sample of individuals. In fact, the majority of both groups remained in the same industry and occupation during the five years.

Conclusion

Graduates of university programs in the humanities and social sciences acquire skills that are different than those obtained in more vocationally oriented programs—as is evident from the different industries and occupations in which they find jobs. And, as a group, humanities and social sciences graduates receive lower wage rates. Furthermore, male graduates of these programs experience higher unemployment.

These aggregate comparisons, however, mask important, long-term dimensions of labour market experiences that may be attributable to the nature of the skill sets these graduates have obtained. The wage disadvantage, for example, was caused by very significant wage differences among young workers of both sexes. By the age of 45, wage rates among humanities and social sciences graduates were above those of their applied programs counterparts. Similarly, higher relative unemployment was attributable to very drastic differences among young workers since older humanities and social sciences workers faced fewer weeks of unemployment.

The picture that emerges is one in which individuals graduating from programs in the humanities and social sciences had considerably more difficulty with the school-to-work transition, as might be expected given the lack of a clear connection between their programs of study and occupations. But once that transition was made, the generic nature of the skills they acquired appeared to stand them in good stead—because these skills have a greater longevity and are complementary to continued, lifelong learning in the face of labour market changes. The shorter unemployment durations for humanities and social sciences women and the higher occupational and industrial mobility among both sexes in this group reinforces the interpretation that their skills were more portable, thus providing them with broader re-employment opportunities.

What is the appropriate balance between investments in general or in technical or vocational skills? While income levels or unemployment rates from cross-sectional data can provide some insights, a more complete understanding of the labour market returns to these different skill sets requires observations of individual career dynamics of the sort afforded by SLID. While the data are extremely complex and the analysis in this report permits only tentative conclusions, the initial findings suggest considerable promise for future, more structured approaches.

Perspectives

■ Notes

1 These relative concentrations are sensitive to the classification used to distinguish the humanities and social sciences group. For example, their relative under-representation in the public administration and finance sectors is at least partly because commerce, management and business administration was included in the applied programs group.

2 The survey design complicates wage rate comparisons since rates may be available for different jobs for an individual and/or at different times for the same job. SLID records hourly wage rates (either reported directly by respondents or imputed using income and hours of work information) at the beginning of each calendar year for jobs in progress at that time. End-of-year rates are also available for jobs in progress at the end of the year. Finally, the last wage rate received in any job ending during the calendar year is reported. A job begun during the year does not trigger a wage observation, so the starting wage is not explicitly recorded. However, SLID indicates whether or not wages change during the year, so that starting wages are implicitly available for those jobs for which wages do not change before December 31.

3 The weekly labour force status attached to each personal record in SLID can be used to determine the incidence and duration of periods of unemployment. Spells beginning before January 1993 or continuing past December 1997 are truncated, so average spell duration will be underestimated. Given the five-year span, this underestimation will likely be small and biases in comparisons across educational categories smaller still. Of 657 spells, 71 overlapped the beginning or the end of the survey period. Dropping these because their true length is unknown would introduce new biases, since longer spells are more likely to be dropped (longer spells are more likely to be observed at the beginning and the end of the period).

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Employment and earnings of postsecondary graduates

Ross Finnie

IT SEEMS TO HAVE BECOME an accepted fact that Generation X, as a whole, has been facing tough times and has consequently sunk into a multifaceted collective malaise: cultural, moral and political, as well as economic. But is the situation really as bad as this popular wisdom suggests?

On the surface, the evidence seems incontrovertible, with various studies reporting a decline in the fortunes of younger Canadian workers, accompanied by explanations of how this came to be.¹ However, most of these studies have used the Survey of Consumer Finances (SCF) databases, and several problems can arise from this concentration of the empirical evidence. One problem is perhaps less cross-verification of the patterns than would be desirable—although the consistency of SCF with other sources is obviously significant.² In addition, applying analysis to the subgroup level—such as different cohorts of recent postsecondary graduates, by sex and level of education—is limited, because the associated sample sizes from the SCF are small. Another problem is that the SCF variables reflect no preference for younger workers in general, or for those going through the school-to-work transition in particular, thus limiting the scope of any analysis of this stage of the life cycle. As well, the cross-sectional nature of SCF precludes any sort of explicitly dynamic analysis, such as how employment status or earnings evolve over the early years in the labour market for given individuals.³ Finally, comparisons over time based on the specific level of education are problematic because of changes in definition.⁴

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This paper offers a longitudinal analysis across cohorts regarding the early labour market outcomes of Canadian postsecondary graduates using the National Graduates Surveys (NGS) (see *Data source and definitions*).

The NGS databases comprise large, representative samples of college and university graduates of 1982, 1986 and 1990. The NGS provides detailed information on educational experiences and early labour market outcomes, based on interviews conducted two and five years after graduation. The NGS facilitates a detailed analysis of the school-to-work transition of postsecondary graduates from the early 1980s into the mid-1990s, a period generally thought to be one of significant change in the labour market—especially for younger workers. This analysis is done by sex and level of education—college, bachelor's, master's or doctoral.

Have early labour market outcomes deteriorated recently for postsecondary graduates? The short answer is ‘no’—or at least not to the degree that some may have thought. More specifically, the most recent class of male graduates (1990) generally had similar employment rates and in some cases moderately lower earnings than the first group (1982 graduates). The middle group (1986 graduates) fared better than either of the other two, having entered the labour market during the boom years of the mid-1980s. While employment rates for female graduates were also effectively unchanged, earnings levels were generally higher for the most recent group—but more so two years than five years after graduation. The earnings gap narrowed fairly significantly by sex, but the narrowing was greater immediately following graduation than at the interview times.

The overall effects of changed ‘characteristics’—field of study, employment status, and industry of employment—are small, while the moderate declines in earnings for certain groups of male graduates appear to be due largely to a generalized downward

shift and attenuated growth in earnings over the early years in the labour market. That is, male postsecondary graduates' age-earnings profiles appear to have become somewhat lower and flatter over the last decade (Finnie 1998b).

The context: General trends in unemployment rates and earnings levels

Unemployment rates

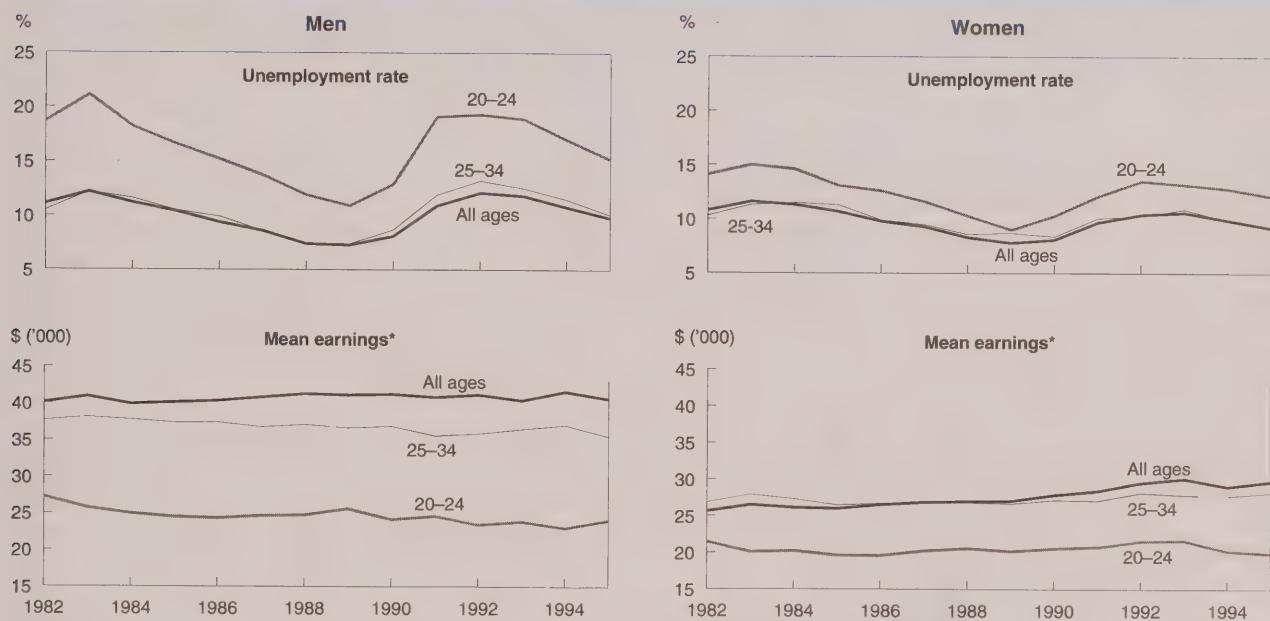
Unemployment rates from the Labour Force Survey for 1982 to 1995—the same period covered by the NGS—were generally higher for younger workers than for older ones (Chart A). In 1995, for example, men 20 to 24 had an unemployment rate of 15.2%, while those 25 to 34 had a rate of 10.1% and men overall had a rate of 9.8%. The latter figure implies considerably lower rates for men 35 and older.⁷ In most cases women's unemployment rates were lower than men's for all age groups, but followed a similar pattern by age.

Rates generally increased in 1983 (after even sharper rises from 1981 to 1982), and then recovered through the rest of the 1980s. They increased again during the early-1990s recession, peaking in 1992, and subsequently improved through 1995.

Around these cyclical patterns—and perhaps contrary to popularly held views—little evidence appears of a general upward trend in unemployment rates over time. For example, comparing 1983 and 1992, the years in which rates peaked, unemployment was lower in 1992 for men and women of all age groups, except men 25 to 34 for whom rates were slightly higher. Similarly, while younger workers generally had higher unemployment rates than older ones, their situation showed no significant general deterioration relative to older workers. The unemployment rates of younger workers thus held more or less stable relative to the overall rates throughout the 1982-to-1995 period.

Two years after graduation, unemployment rates for younger as well as older men were slightly higher for the third cohort (interviewed in 1992) than for the first

Chart A: For persons 20 to 34, unemployment rates are higher and mean earnings are lower than for the general population.



Sources: Labour Force Survey; Survey of Consumer Finances

* In 1995 constant dollars, for full-time workers. The 1983 data by age group are based on estimates by the Income Statistics Division.

Data source and definitions

The National Graduates Surveys

The National Graduates Surveys (NGS) and Follow-ups were developed by Statistics Canada in conjunction with Human Resources Development Canada. The NGS files are representative of the underlying national population of college and university graduates; with over 30,000 individuals in each survey, the postgraduation experience can be analyzed meaningfully at a detailed level.⁵

The availability of data for three separate cohorts of graduates—the classes of 1982, 1986 and 1990—permits the comparison of outcomes over a period characterized by important changes in the labour market, especially for younger workers. It also updates the record as much as possible.⁶

The NGS files are longitudinal, based on information gathered during interviews carried out two and five years after graduation for each succeeding cohort (1984 and 1987, 1988 and 1991, and 1992 and 1995, respectively). This allows for a dynamic and relatively extended analysis of the school-to-work transition at two specific points in time relative to graduation.

Construction of the working samples

Except for an initial analysis of postgraduation activity rates, graduates who indicated at one of the two interviews that they had obtained an additional degree were deleted from the analysis. Such graduates no longer belonged to the original education group—for example, in going on to become a master's graduate, a bachelor's graduate might have chosen a different major field of study—and had in any event been mixing school and work in a way likely to affect the labour market outcomes upon which this analysis

focused. Including later graduates would also have thrown off the postgraduation time frame of two and five years after graduation, which corresponded to the two interview dates and which held for the non-continuing group.

In the earnings analysis, the samples were further restricted to full-time workers, thus focusing the exercise on those with significant labour market attachment and allowing the analysis to abstract from labour supply decisions that could affect earnings patterns. In particular, most full-time continuing students were eliminated from the samples by this condition, for reasons similar to those given for the deletion of graduates with additional diplomas. Finally, observations were deleted where the required information was missing, took extreme values (in the case of earnings), or was otherwise deemed unusable.

The labour force status and earnings variables

The employment and unemployment rates are standard measures that follow the usual Statistics Canada conventions (with the exceptions noted). The earnings variable reflects what individuals would earn on an annual basis were the job to last the full year, regardless of the actual job status.

In automatically adjusting for irregular work patterns over the course of the year, this measure represents the rate of pay, which is perhaps analytically more interesting than the amount earned.

All earnings values are expressed in 1995 dollars, rounded to the nearest thousand, and capped at the \$99,000 upper limit that characterized the 1984 data (the lowest bound in the six databases), or \$143,035 in 1995 dollars.

(interviewed in 1984), and distinctly lower for the middle cohort (interviewed in 1988). Women's unemployment rates showed a broad similarity across cohorts, but the third cohort's rates were slightly lower than those of the first, while the middle cohort again faced more favourable economic conditions than the others. Five years after graduation, men's unemployment rates were uniformly lowest for the first cohort (interviewed in 1987), next lowest for the third cohort (interviewed in 1995), and highest for the middle cohort (interviewed in 1991). Women's unemployment rates were generally quite similar across the three cohorts. The unemployment situation improved between the two interviews for the first and third cohorts, but worsened for the second.

Earnings levels

The patterns in mean earnings of full-time workers of various age groups are in some ways very consistent with the unemployment rates, but are in other ways quite different.

Older men's mean earnings were generally higher than younger ones', reflecting the well-known life-cycle pattern. However, the time paths showed much less cyclical variation than did unemployment rates, while a moderate trend toward lower earnings was evident for both the younger groups of men (20 to 24 and 25 to 34) over the period—both in real terms and relative to older men's earnings, which exhibited no such general decline.

Younger women also showed much less cyclical variation in earnings than was seen for unemployment rates, while the general trends over time were toward moderate gains in real earnings levels, rather than the declines experienced by young men. The mean earnings of female full-time workers of all ages rose as well.

Two years after graduation, the second and third cohorts of male graduates found themselves in labour markets where the earnings of young men aged 20 to 24 and 25 to 34 were, in each case, slightly to moderately lower than those of the preceding wave,

with more pronounced changes from the second cohort to the third. For women, the trends were in the opposite direction, showing increases rather than declines. Five years after graduation, younger men's earnings were again lower, although the timing and extent of the changes varied with the specific age group. For young women, earnings trends were relatively flat for those 20 to 24 and moderately upward for those 25 to 34.

Activity rates of postsecondary graduates

Broad activity rates⁸

In every case, by far the greatest proportion of postsecondary graduates was employed full time, with these rates generally rising between two and five years after graduation (Table 1). Full-time employment rates tended to be higher for men than for women, while women held down more part-time jobs than men did.

Table 1: Status of graduates two and five years after graduation

	Employed		Not in labour force		Employed		Not in labour force								
	Full time	Part time	Unem-ployed	Enrolled	Not enrolled	Full time	Part time	Unem-ployed							
								%		1987					
1982 graduates															
College															
Men	81	5	12	2	1	83	4	7	4	2					
Women	75	12	9	1	3	72	15	5	3	6					
Bachelor's															
Men	76	6	9	6	2	85	5	4	4	2					
Women	70	11	9	5	5	74	12	4	3	7					
Master's															
Men	79	4	6	10	1	88	6	2	3	2					
Women	71	10	8	7	4	74	13	3	3	6					
Doctorate															
Men	86	4	7	2	1	89	4	3	2	1					
Women	80	6	8	1	5	82	9	2	3	4					
1986 graduates															
College															
Men	82	4	11	2	1	83	3	10	3	1					
Women	77	11	8	1	3	75	11	6	2	5					
Bachelor's															
Men	76	6	11	6	1	85	4	6	4	0					
Women	70	12	9	5	3	75	12	5	3	4					
Master's															
Men	76	6	6	10	1	86	5	4	4	1					
Women	72	11	7	7	3	76	14	4	3	4					
Doctorate															
Men	89	4	4	1	1	95	2	2	0	1					
Women	80	10	7	1	2	85	10	3	0	2					
1990 graduates															
College															
Men	81	5	11	1	1	87	4	7	1	1					
Women	73	12	10	2	3	74	14	7	1	5					
Bachelor's															
Men	76	6	10	6	1	85	4	6	4	1					
Women	70	12	10	4	4	75	12	6	2	4					
Master's															
Men	75	6	6	11	1	83	5	6	4	1					
Women	73	10	7	6	3	75	11	5	3	4					
Doctorate															
Men	89	3	5	1	1	93	3	3	0	0					
Women	83	6	7	1	2	82	8	6	0	4					

Source: National Graduates Surveys.

Note: Includes graduates with additional degrees; classification is by original degree.

Full-time work was more common for doctoral graduates than for those at other levels, reflecting a number of demand-and-supply influences. In most cases such graduates have fully completed their schooling, are committed to being in the labour force, and have relatively abundant opportunities for employment.

Beyond this, the rates do not generally vary by level of education—college, bachelor's or master's—because of various crosscutting influences. For example, higher percentages of master's and bachelor's graduates are out of the labour force but still in school; enrolment increases part-time employment at the expense of full-time employment, and college graduates typically have higher unemployment rates than those at the bachelor's and master's levels.

Unemployment and employment rates

Unemployment rates were quite low for graduates of all levels (college through doctoral)—mostly in the 4% to 10% range, but sometimes as low as 2% and nowhere greater than 11% (Table 2). Furthermore, these rates are considerably below the 10% to 20% for workers of comparable ages in the general population, implying considerably higher rates for non-postsecondary graduates. The graduates' rates also compare favourably with those of men and women, thus further distancing college and university graduates from the 'youth unemployment problem.'

The unemployment rates showed only a very slight upward trend across cohorts, with rates generally stable or rising only one

percentage point or so from the first to last set of graduates (some of the later groups actually showed declines at either the two- or five-year interview). Thus, in addition to enjoying generally lower unemployment rates than those of the general population, postsecondary

graduates also appear to have experienced no significant general deterioration in employment opportunities from the early 1980s to the mid-1990s, which may surprise many who have come to accept the Generation X idea in a wholesale fashion.

Table 2: Employment rates of graduates in the labour force

	Employed			Employed			Unem-ployed
	Full time	Part time	Unem-ployed	Full time	Part time		
%							
1982 graduates	1984			1987			
College							
Men	84	5	11	89	4	7	
Women	79	12	9	79	16	5	
Bachelor's							
Men	85	6	9	92	4	4	
Women	79	12	9	81	14	5	
Master's							
Men	89	4	6	92	6	2	
Women	80	11	8	81	15	4	
Doctorate							
Men	89	4	6	93	4	3	
Women	87	6	7	89	9	2	
1986 graduates	1988			1991			
College							
Men	85	4	11	86	4	10	
Women	80	12	8	81	13	7	
Bachelor's							
Men	84	5	10	90	4	7	
Women	78	13	9	81	14	6	
Master's							
Men	87	6	7	90	6	4	
Women	80	12	7	81	15	4	
Doctorate							
Men	91	4	4	96	2	2	
Women	82	10	8	86	11	3	
1990 graduates	1992			1995			
College							
Men	84	5	11	90	4	7	
Women	77	13	10	79	14	7	
Bachelor's							
Men	84	6	10	92	3	5	
Women	78	13	10	82	13	5	
Master's							
Men	86	7	7	89	5	6	
Women	81	12	7	82	13	5	
Doctorate							
Men	92	3	5	94	3	4	
Women	87	7	7	85	9	6	

Source: National Graduates Surveys

Note: Excludes graduates who had completed a new diploma by the relevant interview.

Unemployment rates also declined markedly from two to five years following graduation, sometimes halving or dropping even further (albeit with some variation in these general tendencies by cohort, level of education, and sex). Thus, the school-to-work transition appears to be very much a process rather than a date-specific event; this process evidently extends beyond the first couple of years following graduation and implies that any short-term assessment of how graduates are doing risks being quite misleading.⁹

For the two later cohorts, some patterns by sex appeared in the unemployment rates—such as women tending to have lower unemployment rates than men at the college level, but higher rates at the doctoral level. However, the patterns were neither particularly flagrant nor perfectly uniform, and no obvious general differences were seen at the bachelor's or master's levels.

Part-time work was much more common among women than among men—at all levels of education and at all points in time. Furthermore, the proportion of women with part-time jobs tended to rise over the postgraduation years, reflecting primarily labour supply decisions related to having and raising children. The rise in men's part-time rates (falling in only one case) from two to five years after graduation presumably reflected different life-cycle forces as well as the availability of full-time work. By education level, doctoral graduates, especially women, tended to have lower rates of part-time work than others, but no clear patterns emerged for the other groups.

The most remarkable finding regarding part-time work may be the absence of any clear cross-cohort patterns. At a time when it is often taken for granted that 'non-standard work' in general and part-time work in particular have increased significantly—typically assumed to represent the absence of full-time job opportunities—the data provide no empirical evidence of this among postsecondary graduates. Indeed, comparing the first and last set of graduates, more declines than increases were evident in the proportion of part-time workers.

Earnings patterns

Mean earnings by education level

Not surprisingly, among full-time workers mean earnings were generally higher at each level of education, at least to the master's (Chart B).¹⁰ For all years studied, the difference in annual earnings between college and

bachelor's graduates ranged from \$6,000 to \$10,200, averaging approximately \$8,300 for men and \$8,700 for women. The differences between bachelor's and master's graduates were generally greater—from \$10,000 to \$14,000—and averaged \$12,700 for men and \$11,300 for women.

At the doctoral level, men's mean earnings dipped slightly when compared with those of master's graduates, except in 1995, when earnings were basically equal. In contrast, women's mean earnings rose at the doctoral level.

Taking into account the overall lower earnings levels of women, these absolute dollar patterns indicate greater rates of return from obtaining a bachelor's degree (relative to a college diploma) or a doctoral degree (relative to a master's degree) for women than for men, and comparable rates of return from going on to a master's degree (relative to a bachelor's degree).

Earnings growth in the postgraduation years

Mean earnings rose substantially over the early years in the labour market. The increases varied from a low of 7% for 1986 female master's graduates to as much as 26% for 1982 male bachelor's graduates (Table 3).

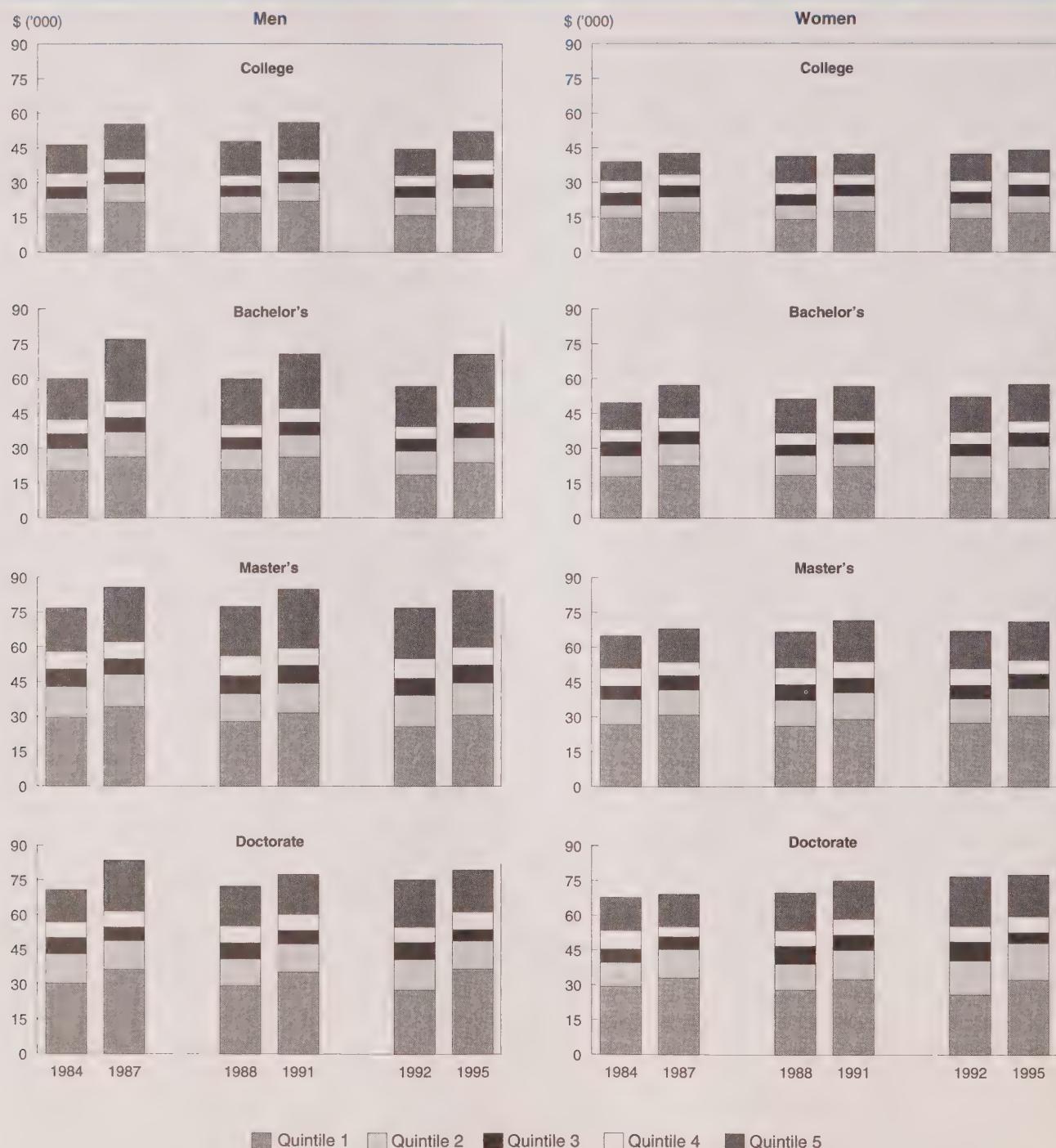
The growth in earnings was uniformly greater in percentage terms for college and bachelor's graduates than for those at the master's and doctoral levels. The latter two groups were characterized by higher, but flatter, postgraduation earnings profiles, a somewhat unexpected finding.

Sex patterns in earnings

Mean earnings were higher for male graduates than for female graduates, with women's mean earnings varying from 77% to 100% of the level of men's for a given education group in a given year. The differences tended to vary inversely with education level, with women's earnings being closest to men's among doctoral graduates, next nearest at the bachelor's and master's levels, and furthest behind at the college level.

On the other hand, two and five years after graduation, women's earnings as a proportion of men's were all higher in each succeeding cohort when compared by education group and interview date. Indeed, in most cases the earnings gap between the sexes narrowed significantly over this period, declining by 30% to 55% from the first cohort to the third among college, bachelor's and master's graduates. For example,

Chart B: The mean earnings of graduates generally increased with their level of education.



Source: National Graduates Surveys

Notes: In 1995 constant dollars. Samples exclude graduates who had completed another diploma by the relevant interview. A given population is divided into five equal segments, each representing 20% of that population.

Table 3: Mean earnings of graduates (1995 dollars)

	First cohort (1982 graduates)			Second cohort (1986 graduates)			Third cohort (1990 graduates)		
	1984	1987	Change	1988	1991	Change	1992	1995	Change
	\$	%		\$	%		\$	%	
College									
Men	29,700	36,600	23	29,400	35,500	21	29,700	35,300	19
Women	24,900	28,200	13	25,100	28,700	14	27,000	29,700	10
Women/men (%)	84	77		85	81		91	84	
Bachelor's									
Men	37,400	47,000	26	37,600	44,700	19	35,700	43,800	23
Women	32,700	38,400	17	33,500	38,900	16	33,600	38,500	15
Women/men (%)	87	82		89	87		94	88	
Master's									
Men	51,400	57,500	12	50,600	55,700	10	50,500	56,500	12
Women	44,400	48,400	9	45,500	48,900	7	46,000	50,400	10
Women/men (%)	86	84		90	88		91	89	
Doctorate									
Men	49,700	56,300	13	49,100	54,400	11	49,300	55,900	13
Women	46,700	50,700	9	47,300	52,400	11	49,400	53,800	9
Women/men (%)	94	90		96	96		100	96	

Source: National Graduates Surveys.

Notes: Samples exclude graduates who had completed another diploma by the relevant interview. The calculations of the mean earnings exclude individuals with reported earnings below \$5,000. Earnings have been truncated to \$143,035.

for college graduates at the first interview, women's earnings were 84%, 85% and 91% of men's, respectively, and the earnings gap narrowed by 44%, from 16 to 9 percentage points. The earnings gap between the sexes was completely eliminated among doctoral graduates for the last cohort at the two-year interview.

Along the other time dimension, however, men's mean earnings rose more than women's from two to five years following graduation for all but doctoral graduates of the middle cohort. Furthermore, in most cases the differences between the sexes in earnings growth were substantial (Tables 3 and 4), meaning that these differences grew significantly in the years following graduation in both relative and absolute terms. This was especially true among college and bachelor's graduates where the differences in mean earnings between men and women were not only generally greater but also increased more sharply over the early years in the labour market than was the case for master's and doctoral graduates.

Finally, while the differences in mean earnings between the sexes were generally smaller in the later cohorts, the differential growth rates did not change in a similar manner. This implies that the earnings gaps seen between the sexes in the later cohorts may continue to widen in the postgraduation years more or less as much as they did with the earlier sets of graduates. That is, while the earnings gaps between the sexes narrowed among postsecondary graduates across cohorts, it would appear that these were 'ratchet-like' cohort effects related to the earnings levels of each group of graduates. At the same time, the gaps have continued to increase from new (lower) levels in the postgraduation years about as much for the most recent set of graduates as for the earliest one.

In short, while female graduates' earnings profiles appear to be shifting up toward men's with each succeeding cohort in terms of the starting levels, the relative slopes of those profiles do not appear to have changed commensurately. Whether this is due to the specific types of human capital investments (such as

Table 4: Median earnings of graduates (1995 dollars)

	First cohort (1982 graduates)			Second cohort (1986 graduates)			Third cohort (1990 graduates)		
	1984	1987	Change	1988	1991	Change	1992	1995	Change
	\$	%		\$	%		\$	%	
College									
Men	28,900	34,500	19	28,300	33,800	19	29,200	35,000	20
Women	23,100	26,900	16	23,400	28,600	22	26,100	29,000	11
Women/men (%)	80	78		83	85		89	83	
Bachelor's									
Men	36,100	43,500	20	34,400	42,300	23	34,400	40,000	16
Women	31,800	37,100	17	32,000	37,000	16	32,300	38,000	18
Women/men (%)	88	85		93	87		94	95	
Master's									
Men	50,600	55,000	9	49,200	52,900	8	46,900	54,000	15
Women	43,300	47,300	9	44,300	47,600	7	43,800	50,000	14
Women/men (%)	86	86		90	90		93	93	
Doctorate									
Men	50,600	53,700	6	49,200	52,900	8	46,900	54,000	15
Women	44,800	51,100	14	46,700	51,800	11	47,900	52,600	10
Women/men (%)	89	95		95	98		102	97	

Source: National Graduates Surveys.

Notes: Samples exclude graduates who had completed another diploma by the relevant interview. The calculations of the mean earnings exclude individuals with reported earnings below \$5,000. Earnings have been truncated to \$143,035.

field of education and postgraduation labour market experience), labour supply factors, direct labour market discrimination, or other factors cannot be answered by these data.¹¹

Cross-cohort earnings patterns

For the first and last cohorts of graduates, whose relevant two-year (1984 and 1992) and five-year (1987 and 1995) interview dates were at roughly comparable points in the business cycle, men's mean earnings were stable to moderately lower for the later graduates, varying with the specific educational level and interview year.

For women, on the other hand, mean earnings were uniformly higher among graduates of the later cohorts than of the earlier ones, in some cases quite substantially. Furthermore, the increases came steadily over time, with earnings rising from the first cohort to the second and then from the second to the third (the only exception being a 1% decline in the mean earnings of bachelor's graduates between 1991 and 1995).

Thus, it was as a result of the cross-cohort declines in the mean real earnings of men and increases registered by women that women's earnings as a proportion of men's rose from the first cohort to the second, and again to the third. This was true for all education groups at two and five years after graduation.

Median earnings and related distribution patterns

The median earnings patterns (Table 4) are generally similar to the means, but with some differences, which imply something about the shape of the underlying earnings distributions of each education-sex group as well as the changes in earnings over time across the different ranges of these distributions.¹²

Average median earnings rose with the level of education, except from master's to doctoral for male graduates. Also, median earnings were generally higher for men than for women. However, the earnings gap between the sexes was smallest among doctoral graduates, next narrowest at the master's and bachelor's

levels, and greatest among college graduates. In addition, women did some significant ‘catching up’ from the first cohort to the second, and again from the second to the third, with women’s median earnings actually surpassing men’s at the doctoral level in 1992 (but no longer in 1995).

Median earnings also rose substantially between two and five years after graduation. More interestingly, while the increases in median earnings for female graduates were in every case greater than or equal to the increases in their means, this was not the case for men, for whom the median increases were in many cases smaller than those of their means, especially in the first two cohorts. As a result, the increases in female graduates’ median earnings between interviews were closer to the men’s increases than was the case with mean earnings, with the exception of bachelor’s graduates of the middle cohort and doctoral graduates of the third cohort. For 1982 and 1986 doctoral graduates, 1986 college graduates, and 1990 bachelor’s graduates, the women’s growth rates surpassed the men’s.

Thus, whereas the earnings gap between men and women based on mean earnings widened between two and five years after graduation in almost every case (except doctoral graduates of the middle cohort), according to the median measures the gap widened more slowly, or even became smaller, in all cases except the two noted above. Nevertheless, according to the median measures, men’s earnings remained greater than women’s for all groups—except, again, the most recent cohort of doctoral graduates as of the first interview.

These mean-versus-median results thus provide an interesting alternative perspective of the evolution of the earnings gap between the sexes over the graduates’ early years in the labour market. At a more fundamental level, they suggest that the changes in earnings following graduation were in most cases relatively more concentrated in the middle and lower earnings ranges for women than for men. That is, equality with respect to the increases in earnings appears to have been greater among women than among men. It appears that more of the higher-earning male graduates have been characterized by higher-than-average earnings increases relative to their fellow graduates than have women—‘fast tracking’ has generally been more of a male than a female phenomenon. On the other hand, the relatively unrobust nature of the median

measures as applied to the NGS data suggest that further investigation of this issue is required before more categorical statements can be made along these lines.¹³

Conclusion

Based on three waves of the National Graduates Surveys, unemployment rates of male and female graduates at all levels have been lower than those of non-graduates, have improved significantly between two and five years following graduation, and have not deteriorated for later cohorts relative to earlier ones. Amidst relatively predictable patterns by sex and level of education, neither have rates of part-time work shifted noticeably over time.

Earnings generally improved significantly in the years following graduation. But the average earnings of male graduates of the more recent cohorts either held steady or showed small to moderate declines relative to earlier groups, while women’s earnings either remained stable or rose. These combined effects have resulted in steady decreases in the various earnings gaps between the sexes (by level of education and year) over the last decade or so.

Thus, with respect to Generation X, the maximum decline in mean earnings of just under 7% found for male graduates at the bachelor’s level is perhaps not as great as many might have expected, given that it represents the worst case among all sets of results for all groups of graduates. Furthermore, the stability and improvements experienced by female graduates would presumably be received as good news in a context where discussions are often predicated on significant declines. Coupled with relatively stable employment rates, this suggests a certain robustness to these earnings findings.

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Notes

- 1 Beaudry and Green (2000), Beach and Slotsve (1996), Finnie (1997a), Morissette and Bérubé (1996), Morissette, Myles and Picot (1995), Picot (1997), Riddell (1995) and Zyblock (1996) all report that the earnings levels of younger workers have declined in relative and/or absolute terms. Beaudry and Green (2000), Morissette and Bérubé (1996), and Finnie (1997b, 1997c and 1997d) indicate that younger workers’ movements up the earnings ladder over the early years in the labour market have also slowed. In short, the age-earnings profiles of recent cohorts of younger workers appear to have both shifted downward and become flatter,

indicating a decline in 'lifetime' earnings. See OECD (1996) for an international perspective of the earnings of younger workers.

2 Finnie (1997a) and Morissette and Bérubé (1996) use databases constructed from individuals' tax files.

3 Beaudry and Green (2000) attempt to push the capacity of the SCF data beyond its inherently static nature by constructing synthetic earnings profiles from the various cross-sections. But while such constructions can be quite useful for many purposes, they can never be as good as true longitudinal data, which follow given individuals over time.

4 Beaudry and Green (2000) also develop useful means for dealing with the 1989 changes in the education categories to create classifications that are as consistent as possible over time, but are still left with an irresolvable margin of error in this regard (owing largely to non-conventional educational pathways).

5 A stratified sample scheme (by province, level of education and field of study) was employed. All results reported here reflect the appropriate sample weights. The databases also include trade and vocational school graduates, but these individuals are not included in the present analysis. Response rates were in the order of 80% for each of the first interviews, and about 90% of these respondents were successfully interviewed a second time for each of the cohorts, resulting in 30,000 to 35,000 observations across the various years of data.

6 The first survey of 1995 graduates has been carried out, but those data were not ready for analysis at the time of writing. Second interview data were collected in 2000.

7 Unemployment rates of even younger men were highest of all (results not shown).

8 The activity rates presented here depart slightly from standard definitions because of the treatment of ongoing students in the NGS: students looking for work are classified as unemployed rather than out of the labour force even if they are enrolled full-time, whereas such individuals are usually counted as out of the labour force. (Classification of students with jobs as 'working' is consistent with the standard treatment.) As for the residual category of non-labour force participants (the last two columns in each year's data), current student status was imputed based on the reasons given for being out of the labour force.

9 The 'transition' notion is the central theme in Finnie (1999b). See Betts, Ferrall and Finnie (2000) for an analysis of the specific issue of time to first job.

10 The analysis focuses on full-time workers in order to abstract from labour supply decisions as much as possible. See Finnie (2000) for further discussion of the merits of this approach.

11 See Finnie and Wannell (1999) for further analysis of these issues.

12 These median results need to be interpreted with some caution, however, because rounding earnings to the nearest thousand means that certain small differences in the underlying distribution of earnings (across groups or over time) could lead to exaggerated differences in the medians. In other cases, differences in the distribution of earnings might be underrepresented by the medians. Such effects could be especially strong when looking at changes over time. See Finnie (2000) for further discussion of the pertinent issues.

While earnings figures were in fact rounded in the raw NGS data in every year except 1995, an analysis of 1995 data indicated that most individuals gave earnings figures rounded to the nearest thousand themselves. Mean earnings levels are unlikely to be greatly affected by the rounding imposed in the other survey years (imposing a similar rule on the 1995 data left the means virtually unchanged). Medians appear to be slightly more sensitive to that rounding (imposing the rounding rule generated greater differences). But the greatest problem with respect to median calculations is likely due to individuals' own rounding of the earnings figures they provided rather than the rounding exercise carried out during the collection of the data.

13 A greater increase in earnings among those in the lower parts of the distribution than among those with higher earnings to begin with. On the other hand, the median really only tells us about the very middle of the distribution, and as noted above the median calculations using the rounded earnings figures available in the NGS data might lack robustness. Hence the caution regarding the interpretation of the findings—which are, nevertheless, both interesting and of some validity because they hold for most groups in most cohorts.

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Fact-sheet on unionization

Ernest B. Akyeampong

SINCE 1997, THE LABOUR FORCE SURVEY (LFS) has been the major source of data on unionization. The first detailed socio-demographic and economic profile of union members from the LFS was released in *Perspectives* on the eve of Labour Day 1997. The profile was updated and expanded in 1998, 1999 and 2000 (Akyeampong, 1997, 1998, 1999 and 2000). This year's update extends it to the first half of 2001. As in past releases, data on earnings, wage settlements, inflation, and strikes and lockouts are also provided.

Table 1: Union rates in first half of 2000 and 2001

At 12.6 million, average paid employment (employees) during the first half of 2001 was 373,000 higher than during the same period a year earlier. Union membership also grew, from 3.7 million to 3.8 million. The increase in union membership, however, was proportionately less than that for employees, so the union rate (density) fell from 30.4% to 30.0%.

This fall affected both men and women: the men's rate fell from 31.1% to 30.7%, and women's from 29.6% to 29.2%.

All of the decline occurred in the private sector, 18.7% to 18.1%. The public sector union rate actually rose marginally, from 69.9% to 71.0%.

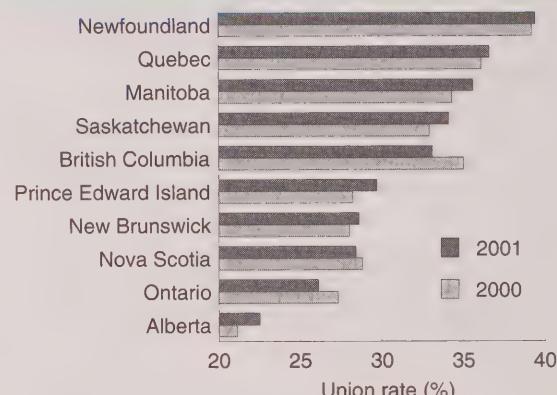
Although the union rate increased in seven provinces, the declines in Ontario, British Columbia and Nova Scotia were large enough to account for the overall decline (Chart A).

The rate among full-time employees fell from 32.2% to 31.5%, but among part-time workers, it rose from 22.0% to 23.2%.

Permanent employees recorded a decline in union density. The rate rose in the largest firms (those with over 500

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Chart A: Newfoundland remains the most unionized province; Alberta, the least.



Source: Labour Force Survey, January-to-June averages

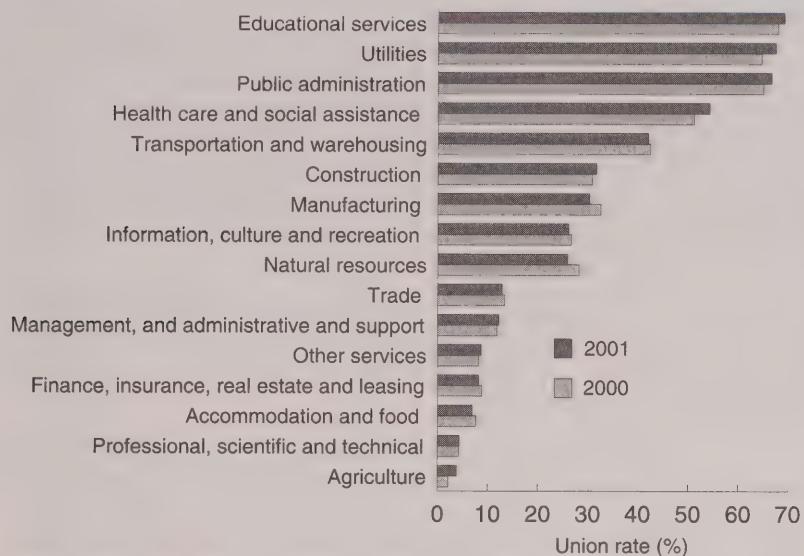
employees) and in the smallest firms (those with fewer than 20 employees), while it fell in firms with between 20 and 500 employees.

Unionization rose in 9 of the 16 major industry groups—agriculture; utilities; construction; professional, scientific and technical services; management, and administrative and support services; educational services; health care and social assistance; other services; and public administration—and fell in the rest (Chart B).

Among the 10 major occupational groups, union density rose in only 3—health, management and occupations unique to primary industry. The remaining 7 experienced declines (Chart C).

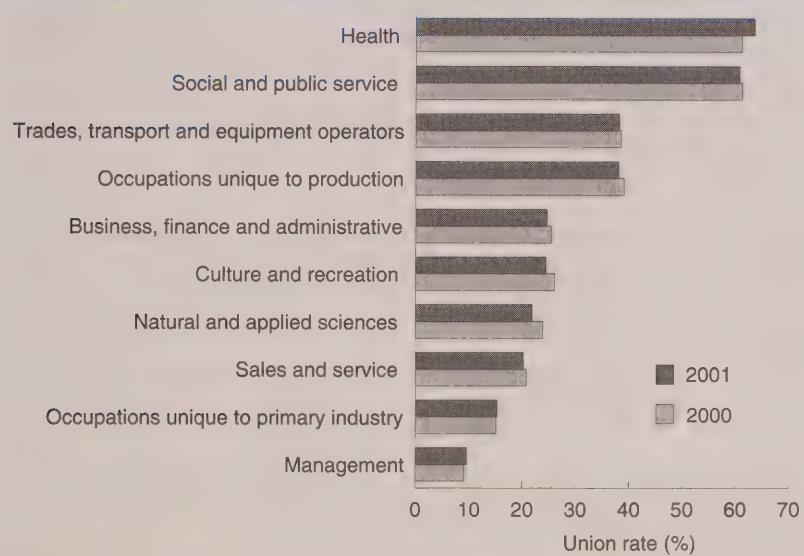
The number of employees who were not union members but were covered by collective agreements averaged 276,000, up from 269,000 a year earlier (see Akyeampong, 2000, for a description of this group).

Chart B: The highest union rates were in public sector-dominated industries.



Source: Labour Force Survey, January-to-June averages

Chart C: Unionization in community service occupations far outpaced that of others.



Source: Labour Force Survey, January-to-June averages

Table 2: 2000 annual averages

Approximately 3.7 million (29.9%) employees belonged to a union in 2000. An additional 285,000 (2.3%) were covered by a collective agreement.

Employees in the public sector—government, crown corporations, and publicly funded schools or hospitals—were almost four times as likely as their private sector counterparts to belong to a union (70.1% versus 18.4%).

Almost one in three full-time employees belonged to a union, compared with about one in five part-time workers. Also, almost one in three employees in a permanent position was a union member, compared with roughly one in five in a non-permanent job.

High union rates were found among employees aged 45 to 54 (41.5%), for those with university degrees (34.4%), in Newfoundland (37.7%) and Quebec (36.1%), in educational services (68.0%), utilities (65.9%), and public administration (65.2%), and in health care occupations (62.1%).

Low union rates were recorded by 15 to 24 year-olds (12.4%), in Alberta (21.2%), in agriculture (2.7%) and professional, scientific and technical industries (4.0%), and in management occupations (9.0%).

Differences between the sexes

Men's union rate (30.6%) in 2000 continued to slightly exceed that of women (29.2%).

The union rate among male part-time workers (16.4%) was about half that of their full-time counterparts (32.2%). Among female employees, however, the gap was narrower (24.6% versus 30.9%).

Women's unionization in the public sector (71.7%) exceeded that of men (67.7%), reflecting their presence in public administration and in teaching and health positions. However, in the private sector, only 13.0% were unionized, compared with 22.8% of men. The lower rate reflected women's pre-dominance in sales and several service occupations.

A higher-than-average union rate was recorded among men with a postsecondary certificate or diploma (34.9%). For women, the highest rate was registered by those with a university degree (41.0%), reflecting unionization in occupations such as health care and teaching.

Men in permanent positions had slightly higher rates (31.9%) than women in similar jobs (30.0%). Among employees in non-permanent positions, women were more unionized (24.1%) than men (21.4%).

Table 3: Average earnings and usual hours

Unionized jobs generally provide higher wages than non-unionized ones. Of course, the wage rate differences reflect many factors in addition to collective bargaining provisions. These include differences in the distribution of unionized and non-unionized employees by age, sex, job tenure, industry, occupation, firm size or geographical location. The effects of these factors are not examined in this update, but it is clear from the previous sections and Table 1 that unionized workers and jobs tend to have certain characteristics that are associated with higher wages. For example, union density ratios are higher among men, older workers, those with higher education, employees with long tenure, and those in larger firms. Clearly, not all differences in wage and non-wage benefits can be attributed solely to union status.

In 2000, the average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true whether they worked full time (\$19.86 versus \$16.58) or part time (\$16.81 versus \$10.20).

In addition to having higher hourly earnings, unionized part-time employees usually worked more hours each week than did non-unionized part-timers (19.5 hours versus 16.6). As a result, their average weekly earnings were nearly double those of the latter (\$336.29 versus \$173.11).

On average, full-time unionized women earned 90% of their male counterparts' hourly wages. In contrast, unionized women who worked part time earned 8% more than their male counterparts.

Table 4: Wage settlements, inflation and labour disputes

Wage gains contained in contract settlements in 1998 and 1999 surpassed inflation, but in 2000 the reverse was true. For the first quarter of 2001, wage gains averaged 3.6%—again higher than the inflation rate (2.8%).

Wage gains in the private sector exceeded those in the public sector every year during the 1990s, but in 2000 and the first quarter of 2001 the picture was reversed.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective bargaining timetables, size of the unions involved, strike durations and the state of the economy. The number of collective agreements up for renewal in a year determines the potential for industrial disputes. Union size and strike duration determine the number of person-days lost in the event of a strike. The state of the economy influences the likelihood of an industrial dispute, given that one is legally possible.

The estimated 0.05% of work time lost through strikes and lockouts in 2000 was roughly half that reported in each of the preceding four years. During the first quarter of 2001, the percentage of work time lost through strikes and lockouts was even lower (0.04%).

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Table 1: Union membership and coverage by selected characteristics

	2000*			2001*		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage**		Members	Coverage**
	'000	%	%	'000	%	%
Both sexes	12,255	30.4	32.6	12,628	30.0	32.2
Men	6,335	31.1	33.5	6,483	30.7	33.0
Women	5,920	29.6	31.5	6,145	29.2	31.3
Sector†						
Public	2,786	69.9	73.7	2,841	71.0	74.9
Private	9,469	18.7	20.5	9,787	18.1	19.8
Age						
15 to 24	2,064	12.6	14.2	2,156	12.8	14.6
25 to 54	9,164	34.0	36.3	9,373	33.2	35.5
25 to 44	6,518	30.7	33.0	6,613	29.6	31.9
45 to 54	2,645	42.1	44.5	2,760	41.8	44.3
55 and over	1,028	33.9	35.9	1,098	36.3	38.2
Education						
Less than Grade 9	403	30.9	32.4	378	30.4	31.7
Some high school	1,597	24.1	25.7	1,591	23.0	24.4
High school graduation	2,634	28.2	30.1	2,635	27.3	29.0
Some postsecondary	1,255	22.7	24.5	1,270	23.9	25.9
Postsecondary certificate or diploma	4,004	34.0	36.3	4,242	33.8	36.2
University degree	2,362	34.7	37.9	2,511	33.8	37.0
Province						
Atlantic	855	30.6	32.1	877	30.8	32.3
Newfoundland	170	39.2	40.6	180	39.4	40.5
Prince Edward Island	51	28.2	29.5	53	29.7	31.7
Nova Scotia	354	28.8	30.3	358	28.4	30.2
New Brunswick	281	28.0	29.7	286	28.6	29.9
Quebec	2,875	36.1	39.7	2,948	36.6	40.1
Ontario	4,869	27.3	28.9	5,036	26.1	27.9
Prairies	2,100	26.0	28.4	2,172	27.3	29.5
Manitoba	456	34.3	37.0	469	35.6	37.3
Saskatchewan	365	32.9	35.3	369	34.1	35.9
Alberta	1,280	21.1	23.4	1,335	22.5	25.0
British Columbia	1,556	35.0	36.5	1,594	33.1	34.5
Work status						
Full-time	10,027	32.2	34.6	10,299	31.5	33.9
Part-time	2,228	22.0	23.3	2,329	23.2	24.7
Industry						
Goods-producing	3,108	32.0	34.4	3,173	30.6	32.7
Agriculture	116	2.1	2.7	116	3.8	4.7
Natural resources	223	28.2	30.1	233	25.9	27.6
Utilities	114	64.6	70.4	120	67.4	70.9
Construction	498	30.8	32.3	535	31.7	33.7
Manufacturing	2,157	32.5	35.2	2,168	30.3	32.4
Service-producing	9,147	29.8	31.9	9,455	29.8	32.0
Trade	1,950	13.3	14.8	2,035	12.8	14.3
Transportation and warehousing	638	42.4	44.2	643	42.0	44.1
Finance, insurance, real estate and leasing	725	8.8	10.4	747	8.2	10.4
Professional, scientific and technical	600	4.2	5.1	678	4.3	5.9
Management, and administrative and support	363	11.8	13.5	392	12.2	14.0
Education	965	67.9	71.8	948	69.2	73.2
Health care and social assistance	1,312	51.1	53.5	1,351	54.2	56.5
Information, culture and recreation	537	26.6	28.3	595	26.1	28.2
Accommodation and food	853	7.6	8.3	862	6.9	7.3
Other	443	8.2	9.5	446	8.7	10.1
Public administration	760	65.0	70.3	760	66.6	71.9

Table 1: Union membership and coverage by selected characteristics (concluded)

	2000*			2001*		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage**		Members	Coverage**
Occupation	'000	%	%	'000	%	%
Management	944	9.1	12.2	871	9.6	12.6
Business, finance and administrative	2,343	25.4	27.5	2,487	24.6	27.0
Professional	292	17.1	19.4	316	17.4	20.1
Financial and administrative	681	23.9	25.9	679	23.2	25.9
Clerical	1,371	28.0	30.0	1,491	26.8	28.9
Natural and applied sciences	827	23.8	26.7	888	21.8	24.5
Health	673	61.1	63.6	695	63.5	65.8
Professional	74	38.1	42.6	79	35.9	42.8
Nursing	223	81.2	82.9	230	81.7	83.2
Technical	173	56.6	59.1	180	59.3	62.1
Support staff	204	51.3	53.8	207	57.6	58.5
Social and public service	926	61.2	64.7	969	60.7	63.7
Legal, social and religious workers	368	37.2	40.3	386	38.1	40.4
Teachers and professors	557	77.1	80.8	583	75.7	79.1
Secondary and elementary	401	87.3	89.8	405	86.5	89.3
Other	156	50.7	57.6	178	51.2	55.8
Culture and recreation	258	26.0	27.9	281	24.4	27.5
Sales and service	3,209	20.7	22.1	3,339	20.2	21.7
Wholesale	310	6.4	7.6	359	5.5	6.9
Retail	858	12.7	13.5	939	12.5	13.7
Food and beverage	476	8.9	9.6	489	8.7	9.2
Protective services	213	52.6	58.7	200	57.9	63.9
Child care and home support	237	32.6	34.4	233	35.4	38.2
Travel and accommodation	1,115	27.1	28.6	1,119	26.6	27.8
Trades, transport and equipment operators	1,678	38.4	40.1	1,710	38.1	40.2
Contractors and supervisors	93	32.5	35.3	103	32.2	35.3
Construction trades	189	41.0	42.5	202	38.8	41.3
Other trades	661	41.9	44.0	684	41.3	43.6
Transportation equipment operators	480	36.4	37.7	463	36.2	37.8
Helpers and labourers	255	33.1	34.6	259	34.6	36.5
Unique to primary industries	235	15.1	16.1	241	15.3	16.4
Unique to production	1,162	39.0	42.0	1,146	38.0	40.2
Machine operators and assemblers	968	38.9	41.9	959	37.8	40.0
Labourers	194	39.4	42.5	187	38.9	40.9
Workplace size						
Under 20 employees	4,074	12.4	13.8	4,165	12.7	14.2
20 to 99 employees	4,046	30.4	32.7	4,152	30.1	32.2
100 to 500 employees	2,621	44.7	47.5	2,754	42.5	45.4
Over 500 employees	1,513	53.9	56.7	1,557	54.0	56.8
Job tenure						
1 to 12 months	2,850	14.0	16.3	3,068	14.5	16.8
Over 1 year to 5 years	3,893	21.6	23.5	4,055	21.7	23.7
Over 5 years to 9 years	1,553	31.8	33.9	1,509	31.6	33.2
Over 9 years to 14 years	1,605	43.0	45.2	1,523	42.0	44.5
Over 14 years	2,354	55.1	57.7	2,473	54.5	57.0
Job status						
Permanent	10,853	31.2	33.4	11,067	30.7	32.8
Non-permanent	1,402	23.5	26.0	1,560	24.8	27.5

Source: Labour Force Survey

* January-to-June average.

** Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

† Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.

Table 2: Union membership and coverage by selected characteristics, 2000

	Total employees	Union member		Union coverage*		Not a union member**
		Total	Density	Total	Density	
		'000	%	'000	%	
Both sexes	12,488	3,740	29.9	4,025	32.2	8,464
Men	6,481	1,985	30.6	2,146	33.1	4,334
Women	6,008	1,755	29.2	1,878	31.3	4,129
Sector†						
Public	2,792	1,956	70.1	2,064	73.9	728
Private	9,696	1,784	18.4	1,960	20.2	7,736
Age						
15 to 24	2,173	270	12.4	308	14.2	1,865
25 to 54	9,258	3,106	33.5	3,331	36.0	5,927
25 to 44	6,580	1,994	30.3	2,149	32.7	4,431
45 to 54	2,677	1,112	41.5	1,181	44.1	1,496
55 and over	1,058	364	34.4	386	36.5	671
Education						
Less than Grade 9	408	120	29.5	127	31.1	281
Some high school	1,639	381	23.2	408	24.9	1,230
High school graduation	2,676	734	27.4	785	29.3	1,891
Some postsecondary	1,277	291	22.8	316	24.7	961
Postsecondary certificate or diploma	4,090	1,389	34.0	1,487	36.4	2,603
University degree	2,399	826	34.4	901	37.6	1,498
Province						
Atlantic	886	267	30.2	281	31.7	605
Newfoundland	178	67	37.7	70	39.1	109
Prince Edward Island	53	15	27.7	16	29.3	38
Nova Scotia	361	104	28.7	109	30.2	252
New Brunswick	293	82	27.8	86	29.4	207
Quebec	2,926	1,057	36.1	1,169	39.9	1,758
Ontario	4,960	1,319	26.6	1,401	28.2	3,559
Prairies	2,134	554	26.0	608	28.5	1,526
Manitoba	463	156	33.7	169	36.5	294
Saskatchewan	372	122	33.0	131	35.1	241
Alberta	1,299	276	21.2	309	23.8	991
British Columbia	1,583	542	34.2	567	35.8	1,016
Work status						
Full-time	10,281	3,251	31.6	3,502	34.1	6,779
Part-time	2,207	490	22.2	523	23.7	1,684
Industry						
Goods-producing	3,200	999	31.2	1,080	33.7	2,120
Agriculture	124	3	2.7	4	3.5	119
Natural resources	234	66	28.0	71	30.2	164
Utilities	116	77	65.9	83	71.6	33
Construction	538	165	30.6	175	32.5	363
Manufacturing	2,187	688	31.5	747	34.1	1,441
Service-producing	9,288	2,742	29.5	2,945	31.7	6,343
Trade	2,001	265	13.2	295	14.8	1,706
Transportation and warehousing	638	266	41.6	278	43.5	361
Finance, insurance, real estate and leasing	736	67	9.0	81	11.0	655
Professional, scientific and technical	619	25	4.0	33	5.4	586
Management, and administrative and support	386	43	11.1	49	12.8	336
Education	929	632	68.0	669	72.0	261
Health care and social assistance	1,327	695	52.4	727	54.8	600
Information, culture and recreation	570	146	25.6	158	27.7	412
Accommodation and food	863	67	7.8	74	8.5	789
Other	458	40	8.6	45	9.9	413
Public administration	762	497	65.2	537	70.4	225

Table 2: Union membership and coverage by selected characteristics, 2000 (concluded)

	Total employees	Union member		Union coverage*		Not a union member**
		Total	Density	Total	Density	
	'000	'000	%	'000	%	'000
Occupation						
Management	952	86	9.0	116	12.2	836
Business, finance and administrative	2,404	611	25.4	665	27.7	1,739
Professional	296	52	17.7	59	20.0	237
Financial and administrative	689	162	23.5	179	26.0	510
Clerical	1,419	397	28.0	427	30.1	992
Natural and applied sciences	852	201	23.6	228	26.7	624
Health	673	418	62.1	434	64.5	239
Professional	74	28	38.4	33	44.4	41
Nursing	229	186	81.3	190	83.1	39
Technical	169	97	57.2	100	59.3	69
Support staff	202	107	53.0	111	55.0	91
Social and public service	924	563	60.9	593	64.2	331
Legal, social and religious workers	373	140	37.4	151	40.4	222
Teachers and professors	551	423	76.7	442	80.3	109
Secondary and elementary	391	342	87.4	352	90.1	39
Other	160	81	50.8	90	56.4	70
Culture and recreation	267	69	26.0	76	28.4	191
Sales and service	3,255	659	20.3	709	21.8	2,547
Wholesale	323	20	6.3	24	7.5	299
Retail	886	113	12.8	122	13.7	764
Food and beverage	482	46	9.5	50	10.3	432
Protective services	205	109	53.0	119	58.4	85
Child care and home support	226	73	32.4	78	34.7	148
Travel and accommodation	1,133	298	26.3	315	27.8	819
Trades, transport and equipment						
operators	1,724	649	37.7	681	39.5	1,043
Contractors and supervisors	99	32	32.5	35	35.1	64
Construction trades	206	80	39.1	84	40.9	122
Other trades	667	277	41.6	292	43.8	375
Transportation equipment operators	482	172	35.7	179	37.1	303
Helpers and labourers	270	87	32.3	92	34.0	178
Unique to primary industries	262	37	14.2	41	15.6	221
Unique to production	1,174	446	38.0	482	41.0	692
Machine operators and assemblers	977	371	38.0	401	41.0	577
Labourers	197	75	38.3	81	41.3	115
Workplace size						
Under 20 employees	4,175	512	12.3	576	13.8	3,599
20 to 99 employees	4,093	1,226	29.9	1,322	32.3	2,771
100 to 500 employees	2,692	1,176	43.7	1,257	46.7	1,434
Over 500 employees	1,529	827	54.1	869	56.9	659
Job tenure						
1 to 12 months	3,035	419	13.8	489	16.1	2,546
Over 1 year to 5 years	3,909	849	21.7	924	23.6	2,984
Over 5 years to 9 years	1,550	479	30.9	513	33.1	1,037
Over 9 years to 14 years	1,608	691	43.0	731	45.5	876
Over 14 years	2,387	1,303	54.6	1,367	57.3	1,020
Job status						
Permanent	10,924	3,384	31.0	3,629	33.2	7,295
Non-permanent	1,564	356	22.8	396	25.3	1,168

Source: Labour Force Survey

* Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

** Workers who are neither union members nor covered by collective agreements.

† Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.

Table 3: Average earnings and usual hours by union and job status, 2000

	Hourly earnings			Weekly earnings			Usual weekly hours, main job		
	All employees	Full-time employees	Part-time employees	All employees	Full-time employees	Part-time employees	All employees	Full-time employees	Part-time employees
	\$	\$	\$	\$	\$	\$	All	Full-time	Part-time
Both sexes	16.64	17.69	11.72	614.87	701.66	210.56	35.7	39.7	17.3
Union member	19.46	19.86	16.81	712.79	769.50	336.29	36.3	38.8	19.5
Union coverage*	19.43	19.85	16.64	712.94	769.94	331.19	36.3	38.9	19.4
Not a union member**	15.31	16.58	10.20	568.23	666.39	173.11	35.4	40.1	16.6
Men	18.36	19.19	10.83	721.49	781.00	182.41	38.5	40.9	16.3
Union member	20.45	20.71	15.79	794.59	822.18	304.27	38.7	39.9	18.6
Union coverage*	20.45	20.72	15.68	795.58	823.73	300.76	38.8	39.9	18.5
Not a union member**	17.32	18.37	9.77	684.80	758.20	156.55	38.3	41.5	15.8
Women	14.78	15.72	12.09	499.84	597.48	222.17	32.8	38.0	17.7
Union member	18.35	18.70	17.10	620.27	697.28	345.11	33.5	37.4	19.8
Union coverage*	18.27	18.64	16.91	618.50	695.68	339.82	33.6	37.4	19.7
Not a union member**	13.19	14.28	10.39	445.87	548.91	180.69	32.4	38.4	17.0
Atlantic	13.82	14.62	9.67	522.43	589.84	173.46	36.7	40.4	17.5
Union member	17.53	17.74	15.43	664.00	699.17	313.60	37.7	39.5	20.2
Union coverage*	17.52	17.76	15.28	662.80	699.47	308.29	37.7	39.5	20.0
Not a union member**	12.10	12.98	8.41	457.30	532.67	143.15	36.3	40.9	17.0
Quebec	16.07	16.86	12.17	579.35	651.01	228.18	35.2	38.7	17.8
Union member	18.73	18.91	17.56	668.35	714.54	366.86	35.6	38.0	20.2
Union coverage*	18.62	18.82	17.29	666.81	712.86	359.44	35.7	38.1	20.1
Not a union member**	14.37	15.45	9.90	521.22	606.57	170.03	34.8	39.2	16.8
Ontario	17.58	18.84	11.55	656.48	751.54	203.60	35.9	39.9	17.0
Union member	20.38	20.95	16.13	760.24	820.20	312.61	36.8	39.2	18.9
Union coverage*	20.39	20.98	16.01	760.94	821.60	308.42	36.8	39.2	18.8
Not a union member**	16.47	17.92	10.48	615.38	721.33	178.62	35.6	40.2	16.6
Prairies	15.70	16.75	11.03	588.73	677.28	196.17	36.1	40.4	17.2
Union member	18.30	18.81	15.49	671.09	738.07	307.69	36.1	39.2	19.6
Union coverage*	18.40	18.94	15.38	677.61	744.86	303.91	36.3	39.3	19.5
Not a union member**	14.62	15.83	9.68	553.30	648.85	162.86	36.1	40.9	16.5
British Columbia	17.59	18.65	13.31	637.07	736.46	236.70	35.0	39.4	17.2
Union member	20.80	21.19	18.63	750.71	819.97	365.55	35.7	38.7	19.2
Union coverage*	20.79	21.21	18.48	752.18	822.06	361.47	35.8	38.7	19.1
Not a union member**	15.80	17.09	11.36	572.87	684.19	189.81	34.6	39.8	16.5

Source: Labour Force Survey

* Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

** Workers who are neither union members nor covered by collective agreements.

Table 4: Major wage settlements, inflation and labour disputes

Year	Average annual increase in base wage rates*			Annual change in Consumer Price Index*	Strikes & lockouts†	Workers involved	Person-days not worked	Proportion of estimated working time
	Public sector employees**	Private sector employees**	Total employees					
1980	10.9	11.7	11.1	10.2	1,028	439	9,130	0.37
1981	13.1	12.6	13.0	12.4	1,049	341	8,850	0.35
1982	10.4	9.5	10.2	10.8	679	464	5,702	0.23
1983	4.6	5.5	4.8	5.9	645	329	4,441	0.18
1984	3.9	3.2	3.6	4.3	716	187	3,883	0.15
1985	3.8	3.3	3.7	4.0	829	162	3,126	0.12
1986	3.6	3.0	3.4	4.2	748	484	7,151	0.27
1987	4.1	3.8	4.0	4.3	668	582	3,810	0.14
1988	4.0	5.0	4.4	4.0	548	207	4,901	0.17
1989	5.2	5.2	5.2	5.0	627	445	3,701	0.13
1990	5.6	5.7	5.6	4.8	579	270	5,079	0.17
1991	3.4	4.4	3.6	5.6	463	253	2,516	0.09
1992	2.0	2.6	2.1	1.5	404	150	2,110	0.07
1993	0.6	0.8	0.6	1.9	381	102	1,517	0.05
1994	...	1.2	0.3	0.2	374	81	1,607	0.06
1995	0.6	1.4	0.9	2.2	328	149	1,583	0.05
1996	0.5	1.7	0.9	1.6	330	282	3,352	0.11
1997	1.1	1.8	1.5	1.6	284	258	3,610	0.12
1998	1.6	1.8	1.7	1.0	381	244	2,444	0.08
1999	1.9	2.7	2.2	1.7	413	159	2,446	0.08
2000	2.5	2.3	2.5	2.7	377	144	1,662	0.05
2001	3.7	2.4	3.6	2.8	90	56	855	0.04

Sources: Prices Division; Human Resources Development Canada, Workplace Information Directorate

Note: Major wage settlements refer to agreements involving 500 or more employees.

* 2001 data refer to January to March only.

** Public sector employees are those working for government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions. Private sector employees are all other wage and salary earners.

† 2001 data refer to January to May only.

Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the Labour Force Survey. Further details can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at (613) 951-4090.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources Development Canada. Further infor-

mation on these statistics may be obtained from Angèle Charbonneau, Workplace Information Directorate, HRDC at 1 800 567-6866.

Only abridged tables have been included here. The full versions are available, without charge, through the "Key labour and income facts" link in the online version of *Perspectives* (www.statcan.ca/english/indepth/75-001-peonline.htm).

What's new?

Recent reports and studies

■ JUST RELEASED

■ *Manufacturing industries*

The Annual Survey of Manufacturers collects information on approximately 35,000 manufacturing establishments grouped into 259 industries. Data collected from the survey are now classified according to the 1997 North American Industry Classification System, which replaces the 1980 Standard Industrial Classification. The survey measures production and provides an indication of the well-being of each industry and its contribution to the Canadian economy.

The publication *Manufacturing industries of Canada: National and provincial areas, 1998* (Catalogue no. 31-203-XPB, \$68) includes an analysis of the manufacturing industry and an article on "The Development of the North American Industry Classification System (NAICS) Manufacturing Time-series, 1990-1997, Outline." It also includes tables on principal statistics, notably shipments, materials purchased and labour. The data are also available electronically on demand.

For more information, contact the Dissemination Officer, Manufacturing, Construction and Energy Division, at (613) 951-9497 or 1 866 873-8789; fax: (613) 951-9499; manufact@statcan.ca.

■ *Productivity*

Detailed industry data on labour and multifactor productivity in Canada's business sector have been revised. These revisions came from the normal update process and from an initiative to improve statistical coverage of the services sector. New survey information has led to an upward revision in real value-added growth in the services sector in 1997. Equally important, some manufacturing and construction activities have been reclassified to services, specifically in wholesale trade and services to businesses.

As a result of these revisions, the average annual labour productivity growth rate in the business sector has been revised upward from 1.0% to 1.3% for the period 1988 to 2000. The average annual growth rate in multifactor productivity has been revised from 0.7% to 0.8%. The larger revision to labour productivity growth comes from the adoption of a value-added measure at basic price to derive the ratio.

Productivity growth—a measure of the efficiency with which the economy transforms inputs into output—largely determines the increase in real income. Labour productivity measures the growth of output per hour worked; the broader multifactor productivity measures the productive efficiency of labour and capital in combination.

While the trend in the overall productivity growth rate remains much the same as previously reported, revisions have shifted the underlying sectoral components—goods and services.

In the goods sector, real value-added growth was revised down from 5.7% to 4.4% for 1997. This was more than offset by an upward revision in the services sector. The real value added in the services sector (excluding owner-occupied dwellings) in 1997 increased from 4.9% to 6.8%.

Moreover, growth in real value added in the services sector has been revised upward for 1998 and 1999. This has produced a slight increase in real value-added growth for the entire business sector for 1997, 1998 and 1999. Real value-added growth was revised up 0.5 percentage points in 1997, 0.3 points in 1998 and 0.4 points in 1999.

These revisions had a downward effect on both labour and multifactor productivity in goods-producing businesses after 1996. However, this downward shift was more than offset by an increase in productivity growth in services-producing businesses. For the business sector as a whole, the growth in labour productivity remained the same in 1997, but was revised upward for 1998 and 1999.

For services, the average annual growth rate in labour productivity from 1988 to 2000 was 1.2%, compared with 0.8% previously reported to 1999. In manufacturing, the average annual growth from 1988 to 2000 was 2.1%, compared with 2.2% reported previously for 1988 to 1999.

Revisions were also made to the multifactor productivity estimates. The average annual growth rate in services from 1988 to 2000 was 0.4%, compared with 0.2% for the period 1988 to 1999. In manufacturing, the average annual growth between 1988 and 2000 was 1.7%, compared with 1.6% reported previously for 1988 to 1999.

In manufacturing, both measures show that performance in the 1990s remained much the same as in the 1980s. In contrast, productivity growth in the services sector was higher in the 1990s. Thus, the higher productivity growth in the business sector as a whole in the 1990s was attributable to services.

More aggregated industry data also integrate subsequent revisions up to 1999 in the preliminary annual estimates of productivity. The estimates of gross domestic product for labour productivity are now calculated at basic prices rather than at factor costs and are, therefore, now consistent with the multifactor productivity estimates that already use a chain Fisher index of GDP valued at basic prices. This corresponds to GDP at factor cost adjusted for taxes and subsidies. (For definitions of labour productivity and multifactor productivity and the business sector, see *Productivity Growth in Canada*, [Catalogue no. 15-204-XIE, \$35 or Catalogue no. 15-204-XPE, \$46].)

To request data, contact productivity.measures@statcan.ca. For more information, contact Micro-Economic Studies and Analysis Division: Tarek M. Harchaoui at (613) 951-9856, harctar@statcan.ca; or Jean-Pierre Maynard at (613) 951-3654, maynard@statcan.ca; or fax (613) 951-5403.

■ Demographics

The first part of this report describes recent trends in population growth, fertility, and migration.

The second part consists of four studies: the effect of smoking on disability-free life expectancy; the effect of causes of death on changes in life expectancy at higher ages since 1951; the links between demographic

changes and the economic well-being of families with preschool-age children; and the birth of children into blended families.

The 2000 issue of the *Report on the demographic situation in Canada* (Catalogue no. 91-209-XPE, \$31) is now available. For more information, contact Alain Bélanger, Demography Division, at (613) 951-2326.

■ National Accounts

Statistics Canada has revised the method for measuring economic activity that will make the official estimate of economic growth more accurate, as well as more comparable to that of the United States.

The Agency has adopted another internationally accepted method of calculating the inflation-adjusted (real) gross domestic product (GDP). This change will result in a slight downward revision to real GDP growth rates.

Statistics Canada has replaced the chain Laspeyres constant price GDP (which measures GDP using prices for goods and services from a base year, currently 1992) with the chain Fisher real GDP method, which updates prices each quarter.

The switch occurred on May 31, 2001 with the release of the National Income and Expenditure Accounts for the first quarter of 2001. The Provincial Economic Accounts and the GDP by industry will all be rebased to 1997 in the fall of 2001, and converted to the Fisher measure within two years.

Two other major changes will also occur at the same time: a change in the way software is accounted for in calculating GDP, and a revaluation of the aggregate GDP at factor cost.

All spending on developing and purchasing software will be treated as a capital expenditure. Previously, only a small portion, less than 20% of total software expenditures, was treated as such. This will be a net addition to GDP, both in level and in growth, in the years in which software expenditures grow faster than other components of final expenditure. Treating software as a capital expenditure has recently been introduced by most countries, including the United States, in line with United Nations recommendations.

The aggregate GDP at factor cost will be revalued to include indirect taxes, less subsidies, on labour and capital, such as payroll taxes and property taxes. The

new valuation is at basic prices; it also follows international recommendations and brings Canada in line with the basis of valuation used by other countries. This change will be applied back to 1961, and has no effect on overall GDP at market prices. Changes are also pending for the monthly GDP by industry.

A full technical explanation of the Chain Fisher Volume Index is available on Statistics Canada's website (www.statcan.ca) on the "Statistical methods" page. The new table structure and CANSIM numbers are also available there.

For more information, contact Karen Wilson, Income and Expenditure Accounts Division, at (613) 951-0439.

■ Construction industry wage rates

This survey of wage rates was done on behalf of the Labour Program of Human Resources Development Canada (HRDC) to establish fair wage schedules for workers on federal construction projects. The survey was conducted in phases, starting with the Atlantic provinces in 1999. It does not cover Quebec and Yukon, where wage rates are based on schedules set by those governments. Data are now available for British Columbia.

Hourly wage rates were collected in January and February 2001 for 37 occupations in commercial and institutional construction in British Columbia. The occupations were selected on the basis of consultations in the fall of 2000 with unions and employers in British Columbia's construction industry. The list was then finalized in consultation with HRDC.

The survey covered establishments with six or more employees working on institutional or commercial construction projects. These establishments were asked to provide wage rates for employees working full time in selected occupations and to indicate whether the workers were unionized or non-unionized.

Hourly wage rates in commercial and institutional construction varied across British Columbia. Generally, construction workers employed by companies in the Greater Vancouver-Center-South area tended to receive higher pay, followed by those in the Island-Coast-Northern region and then the South-Interior region.

Wage rates also varied significantly depending on occupation. Of the 37 occupations surveyed, the most frequently paid wage rate in commercial and institutional construction ranged from \$10.61 per hour for a flag person to \$32.30 per hour for an elevator constructor. (British Columbia's minimum hourly wage is \$7.60.)

The three most highly paid occupations were elevator constructors, who earned \$32.30 an hour as the most frequently paid wage rate; certified refrigeration and air conditioning mechanics (\$27.59); and crane operators (\$25.25).

For more information, or to request a copy of the data, contact Monica Weise, Small Business and Special Surveys Division, at (613) 951-3217; monica.weise@statcan.ca.

■ Employment dynamics

The number of businesses with employees edged up from 955,000 in 1997 to 969,000 in 1998, according to a database of all businesses issuing T4 slips. The net 1.5% increase resulted from the appearance of 148,000 employers that were newly identified on the database in 1998, offset by the disappearance of 134,000 employers that had existed in 1997. About 822,000 firms were present in both 1997 and 1998.

Firms in 1998 employed about 12,952,000 part-time and full-time employees on average during the year, about 672,000 more than in 1997. Newly identified employers added 516,000 jobs; a loss of 399,000 jobs was attributed to firms that disappeared; and firms present in both 1997 and 1998 added a net 556,000 jobs.

Employment dynamics (Catalogue no. 61F0020XCB, \$500) is a compilation of statistical tables on employment, payrolls and the number of businesses with employees for Canada, the provinces and territories. From 1983, net year-over-year changes in total employment are broken down according to job gains attributed to newly identified employers, job losses attributed to firms that ceased to be identified as employers, job gains attributed to continuing employers that increased their respective employment levels, and job losses attributed to continuing employers that decreased their respective employment levels.

For more information, contact Jamie Brunet, Small Business and Special Surveys Division, at (613) 951-6684; jamie.brunet@statcan.ca.

■ Employment Insurance

Statistics Canada has completed a historical revision to the number of beneficiaries of EI (Employment Insurance), both unadjusted and adjusted for seasonal variation. This revision was necessitated by an understatement of beneficiaries data from January 1997 to April 2000. At the same time, seasonal factors for the series on claims received, benefits paid and weeks were revised from January 1997. The EI data on claims, disqualifications and disentitlements and weeks were not affected by the revision.

For more information about all EI series, contact the Client Services Section, Labour Statistics Division, at (613) 951-4090 or 1 866 873-8788; fax: (613) 951-4087; labour@statcan.ca.

■ Labour and income dynamics

The cross-sectional public-use microdata file for the 1998 Survey of Labour and Income Dynamics (SLID) is now available on CD-ROM (Catalogue no. 75M0010XCB, \$2,000).

Up to 1997, the Survey of Consumer Finances (SCF) provided microdata files to meet the needs of users of cross-sectional household income data. Statistics Canada is continuing the transition from SCF to SLID as the source of detailed cross-sectional household income data.

For more information about the survey and related products and services, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ Household spending

The public-use microdata file from the 1999 Survey of Household Spending offers information about spending on a wide variety of goods and services, as well as dwelling characteristics and information about household ownership of equipment.

The estimation methodology was changed for 1999. Survey weights are now adjusted to reflect population and household counts based on the 1996 Census and

the income distribution of the Canadian population. Historical comparisons with data from the 1999 Survey of Household Spending should generally be made with re-weighted data.

The public-use microdata file for the Survey of Household Spending in 1999 (Catalogue no. 62M0004XCB, \$3,000) is now available. Also available are revised microdata files that include updated survey weights for the 1997 and 1998 Survey of Household Spending at a cost of \$100 each for users wishing to replace previously purchased files, or \$3,000 each for users placing a new order. Revised microdata files for the 1992 and 1996 Family Expenditure Survey are planned.

For more information about the current survey results and related products and services, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ Income prospects of university graduates

The research study, *Income prospects of British Columbia university graduates*, examines the annual market income of individuals who obtained bachelor's degrees from universities in British Columbia between 1974 and 1996.

According to the study, men and women who graduated during the early 1990s earned less in the two years after graduation than did their counterparts a decade earlier.

However, incomes for graduates during the 1990s grew faster than they did for graduates during the 1980s. As a result, incomes for the more recent set of graduates eventually caught up with and then surpassed those of the earlier group.

Male graduates with a bachelor's degree in 1990 earned 11.1% less two years after graduation than did their counterparts of 1980. However, the gap narrowed to 6.7% four years after graduation, and to 2.1% within six years. Within seven years of graduation, the gap had virtually disappeared.

Among women, the gap was less pronounced. Female graduates with a bachelor's degree in 1990 earned 3.4% less two years after graduation than did

their counterparts of 1980. However, incomes for female graduates caught up more quickly, surpassing the incomes for the 1980 group of graduates within four years. Seven years after graduation, female graduates from the class of 1990 were earning 11.5% more than their counterparts of 1980.

This study also examines incomes for graduates in eight major fields of study. It compares the rates of growth of median income in one field, in which people started with lower salaries, with those in another field in which people started with higher salaries. The study found that salaries grew in both groups, but they grew at a faster rate in the field where graduates started with lower salaries.

Income after graduation was relatively high for graduates with applied degrees such as engineering, education and health. For example, five years after graduation male engineering graduates had median annual market incomes 28% higher than social science graduates. For 1974 graduates, the gap in absolute terms was almost \$12,000 in constant 1992 dollars.

The range of incomes narrowed over time. Fifteen years after graduation, the median salary for male engineering graduates was just 14% more than that of male social sciences graduates. For 1974 graduates, the gap in absolute terms was \$8,300, again measured in constant 1992 dollars.

In contrast, annual incomes for women after graduation appeared to converge at a faster rate. For example, five years after graduation, women with health degrees made 38% more than their counterparts with social sciences degrees. Within 15 years of graduation, women in health earned just 8% more.

The research paper *Income prospects of British Columbia university graduates* (Catalogue no. 11F0019MIE01170, free) is now available on Statistics Canada's Web site (www.statcan.ca). From the "Our Products and services page," choose "Research papers (free)." A printed version (Catalogue no. 11F0019MPE01170, \$5) is also available. For more information, contact Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-3748.

("Liberal arts degrees and the labour market" and "Employment and earnings of postsecondary graduates" in this issue also examine this topic.)

■ WHAT'S NEW IN EDUCATION?

■ Adult education and training

Approximately 28% of Canadians enrolled in adult education and training activities in 1997. Three of every four who did so took them for a job-related purpose, according to a report based on the 1998 Adult Education and Training Survey.

However, rates of participation in adult education and training declined slightly through the 1990s. In 1997, more than 6 million people aged 17 and over, or nearly 28% of adults, participated in education and training activities, down from about 29% in 1991.

Also, the lower a person's educational level, the less likely he or she was to enrol in an adult education program. A university graduate was five times more likely to obtain further education than someone who did not complete high school.

In addition, participation rates were higher among the employed population than among the unemployed. In 1997, about 20% of unemployed workers participated in job-related education and training activities, compared with 29% of employed workers. This reflects the important role employers play in providing training programs.

Overall participation rates were sharply lower for the older age groups. Only 15% of those 55 to 64 and 5% of those 65 and over participated in adult education and training activities, compared with more than 30% for all other age groups.

Rates in Quebec and the Atlantic provinces, except Nova Scotia, were lower than the national average of 28%. Differences in provincial participation rates narrowed somewhat during the 1990s.

Public and private educational institutions dominate the market for adult education and training. However, employers play a crucial role in providing training programs as well. Public education institutions offered three-quarters of all programs and one-quarter of all courses taken in 1997. Employers organized one in every five courses and close to one-third of job-related courses. Commercial schools provided 20% of courses taken for job-related reasons as well as 20% of those taken for personal interest.

As found in previous surveys, the biggest barrier to taking some form of adult education was a lack of time. Six of every 10 adults who wanted to take a course or training but did not reported that their work schedule was too busy. Cost or lack of financial resources, as well as the inappropriate time or location of program offerings, were reported as a major barrier by 40% of those who wanted to take a course but did not.

This report is based on results of the 1998 Adult Education and Training Survey, a joint project of Statistics Canada and Human Resources Development Canada (HRDC). The survey collected information on education and training activities taken in 1997 by people aged 17 and over.

The report estimates the volume of formal adult education and training and, for the first time, analyzes trends in participation over the past decade. It also provides a detailed overview of the social distribution of participation in adult education and training.

Adult education and training includes all structured educational (credit and non-credit courses) and training activities taken at work, at school or at any other location for job-related or personal interest reasons.

A report on adult education and training in Canada: Learning a living (Catalogue no. 81-586-XIE, free) is now available on Statistics Canada's website (www.statcan.ca) and HRDC's website (www.hrdc-drhc.gc.ca/arb). On Statistics Canada's site, from the "Our products and services" page, choose "Free publications." Copies are also available from the HRDC Inquiry Centre, Hull, Quebec, K1A 0J9, or by fax at (819) 953-7260.

For more information, contact Robert Couillard, Centre for Education Statistics, Statistics Canada, at (613) 951-1519; fax: (613) 951-9040; robert.couillard@statcan.ca, or Ghyslain Charron, Human Resources Development Canada, at (819) 994-5559; info@hrdc-drhc.gc.ca. To enquire about concepts, methods or data quality, or other education statistics, contact Client Services, Centre for Education Statistics, at 1 800 307-3382 or (613) 951-7608; fax: (613) 951-9040; educationstats@statcan.ca.

■ *Education at a glance*

The Organisation for Economic Co-operation and Development (OECD) has published *Education at a Glance: OECD Indicators, 2001 Edition*. The report presents an updated range of internationally comparable OECD education indicators representing

the consensus of professional thinking on how to measure the state of education. The full report is available on the OECD's website (www.oecd.org).

The education indicators for Canada were calculated from data provided by Statistics Canada as part of its involvement with the Canadian Education Statistics Council, which includes the provincial and territorial deputy ministers of education.

For more information, contact Client Services, Culture, Tourism and the Centre for Education Statistics, at (613) 951-7608 or 1 800 307-3382; fax: (613) 951-9040; educationstats@statcan.ca.

■ *Education in Canada*

Education in Canada summarizes data on institutions, enrolment, graduates, teachers and finance for all levels of education. Its 206 pages, and 71 tables present a comprehensive overview of the key variables in Canadian education.

Ten-year time series are shown for most variables at the Canada level and five-year time series at the provincial level. The publication also provides demographic data from the Census and educational attainment, labour force participation rates and unemployment rates of the adult population from the Labour Force Survey.

Education in Canada, 2000 (Catalogue no. 81-229-XIB, \$38 or Catalogue no. 81-229-XPB, \$51) is now available. For more information, contact Client Services, Culture, Tourism and the Centre for Education Statistics, at (613) 951-7608 or 1 800 307-3382; fax: (613) 951-9040; educationstats@statcan.ca.

■ *Private education*

Children from both ends of the income distribution attend private schools: 29% of children who attend private schools are from families with incomes below \$50,000; 26% are from families with at least twice as much income.

In contrast, about 43% of children (15 or younger) attending public schools had family incomes of less than \$50,000, and only 12% had family incomes over \$100,000. The proportion of children who come from households with an annual income of \$50,000 to \$100,000 was about the same in the case of both private and public schools, 45%. (In 1998, one-half of all children were from families with incomes less than \$55,000.)

In 1998/99, 1 in every 18 children in Canada, or 5.6%, up from 4.6% in 1987/88, attended a private school for elementary or secondary education. In total, 298,000 were enrolled in private schools; just under 5 million went to public schools.

The proportion was highest in Quebec, where more than 9.2% of children were enrolled in a private elementary or secondary school in 1998/99. In British Columbia, 8.8% of all students were in private schools. The lowest proportions of children in private schools were in the Atlantic provinces and Saskatchewan. Only 0.4% of all children in Newfoundland, 0.6% in New Brunswick, 1.0% in Prince Edward Island, 1.6% in Nova Scotia and 1.3% in Saskatchewan were enrolled in private schools.

Data on the income levels of families who send their children to private schools come from the third cycle of the National Longitudinal Survey of Children and Youth, conducted in late 1998 and early 1999. This survey collected information on about 32,000 children ranging in age from newborn to 15 on aspects of their lives including the income background of their parents. Calculations based on this information are for those aged 4 to 15, and do not include the majority of children in high school, those 16 and older.

Data on enrolment come from the Survey on School Enrolment and Graduates. Data on expenditures for private and public elementary and secondary schools come from the Survey of Financial Statistics of Private Schools and the Survey of School Boards. For more information consult the Statistics Canada publication *Education in Canada* (Catalogue no. 81-229-XPB).

Public schools include all elementary and secondary schools operated by public, separate, and linguistic school boards. They do not include schools directly administered by the federal government (overseas schools operated by the Department of Defence, and schools operated by Indian and Northern Affairs Canada) or provincially operated schools for the disabled (schools for visually and hearing impaired students).

Private schools are schools operated and administered by private individuals or groups. They may be affiliated with a religious or linguistic group, or may provide specialized education to the learning disabled or gifted. Home schooling and schools in institutions are not included in this definition. Less

than 0.5% of all children in the National Longitudinal Survey of Children and Youth attend home or institutional schools.

For more information, contact Garth Lipps or Miles Corak, Family and Labour Studies Division, at (613) 941-6381 or (613) 951-9047, respectively.

■ WHAT'S NEW IN AGRICULTURE?

■ Agricultural statistics

The 2001 *Extraction system of agricultural statistics* (ESAS) on CD-ROM contains an extensive collection of the most requested physical and financial data on farming. The product is a co-operative effort involving Statistics Canada and Agriculture and Agri-Food Canada.

This menu-driven software allows users to extract data by Census Agricultural Region, farm type and revenue class. The 2001 version of ESAS contains a full year of new data and a revised user's guide and reference manual.

ESAS enables users to reorganize reports, perform calculations and create graphs. Selected tables can be viewed, printed or exported for use in other applications.

The 2001 *Extraction system of agricultural statistics* on CD-ROM (Catalogue no. 21F0001XCB, \$625) is now available. The update can be purchased for \$295. A 50% educational discount is also available. To order, contact your nearest Statistics Canada Regional Reference Centre or call 1 800 267-6677.

For more information, contact Linda Brazeau, Agriculture Division, at (613) 951-5027; linda.brazeau@statcan.ca, or the Agriculture Division at 1 800 465-1991; agriculture@statcan.ca.

■ Farm operators' total income

Farm operators obtained proportionally more income from non-farm sources in 1999 than in 1998, according to analysis of data from personal income tax returns. The proportion of income from non-farm sources has grown steadily since 1995. In 1999, income from non-farming activities accounted for 58 cents of every dollar in farm operator income, compared with 52 cents in 1995.

On average, farm operators' total income remained practically unchanged from 1998, at \$40,000. A 5.4% drop in average net farm operating income (before depreciation) was offset by a 4.5% rise in average off-farm income. Average off-farm income amounted to \$23,200 in 1999 and average net farm operating income totalled \$16,800.

The growth in average off-farm income resulted mainly from a 2.6% increase in off-farm employment income (which averaged \$14,200) and from an 18.6% rise in other off-farm income. Other off-farm income includes payouts from the Net Income Stabilization Account which provides financial assistance to producers by stabilizing their net income.

Wages and salaries were still the most important source of off-farm income in 1999, accounting for 55% of the total. Investment income and pension income represented 16% and 14%, respectively.

Farm operators specializing in poultry and egg production again had the highest average total income among all major farm types in 1999. Their income reached \$77,700 in 1999, up 0.4% from 1998. Operators who ran hog farms posted the largest percentage gain (18.5%) in average total income, following a 38.8% decline in 1998.

Average off-farm income grew in every province in 1999. The largest gain occurred in New Brunswick (9.7%). Average off-farm income ranged from \$16,300 in Quebec to \$32,400 in British Columbia.

Off-farm income includes employment income (wages and salaries, and net off-farm self-employment income), investment income, pension income and other income (government transfers, such as social assistance payments and child tax benefits, but excluding pensions; Registered Retirement Savings Plan income; and other income such as alimony or maintenance income and NISA payouts). Provincial family allowances are not part of operators' off-farm income.

These estimates refer to the income of farm operators involved in one or more unincorporated or incorporated farms. These estimates encompass unincorporated farms with gross operating revenues of \$10,000 or more in 1999, and incorporated farms with total agricultural sales of \$25,000 or more in 1999.

For custom data requests, contact the Client Services Unit, Agriculture Division, at 1 800 465-1991; agriculture@statcan.ca. For more information, contact Lina Di Piétre, Agriculture Division, at (613) 951-3171; fax: (613) 951-3868; lina.dipietro@statcan.ca.

■ **Farm income and cash receipts**

Net cash income for farmers—the difference between their cash receipts and operating expenses—increased in 2000 for the first time in three years, even though crop producers saw revenues fall for the third straight year, to a six-year low.

Farmers recorded net cash income of \$7.1 billion, up 15.3% from 1999, the largest increase since 1992. The level was 10.7% above the average of \$6.4 billion for the five-year period from 1995 to 1999.

Total cash receipts and operating expenses set new records. Cash receipts grew 7.8% to \$32.8 billion, which was 11.7% above the previous five-year average. The increase was largely due to growth in revenue for hogs and cattle, as well as program payments. Operating expenses rose 5.9% to \$25.7 billion, the result of higher fuel and interest costs and livestock purchases. Program payments soared to a seven-year high of \$2.8 billion.

Farmers incurred declines in net cash income in four provinces: Prince Edward Island (-53.6%), Newfoundland (-32.8%), New Brunswick (-27.4%) and Manitoba (-2.1%). For Manitoba farmers, it was the third straight decline. In Saskatchewan, net cash income was virtually unchanged following two years of decline; in Alberta, it rose 62.9% to its highest level since 1996. Lower potato prices and marketings led the declines in Prince Edward Island and New Brunswick.

Net cash income measures farm business cash flow (farm cash receipts minus operating expenses) generated from the production of agricultural goods. Net cash income represents the amount of money available for debt repayment, investment or withdrawal by the owner.

Farm cash receipts measure the gross revenue of farm businesses in current dollars. They include sales of crops and livestock products (except sales between farms in the same province) and program payments. Receipts are recorded when the money is paid to farmers before any expenses are paid.

Farm operating expenses represent business costs incurred by farm businesses for goods and services used in the production of agricultural commodities. Expenses are recorded when the money is disbursed by the farmer.

Total net farm income measures agriculture economic production by adjusting net cash income for value-of-inventory change, depreciation and income in kind. Total net farm income rose 3.5% to \$3.0 billion in 2000; the increase in net cash income more than offset a decline in total value of inventory. This marked the third consecutive increase, following a substantial decrease from its 1996 peak of \$4.5 billion.

The semi-annual supplement *Agriculture economic statistics* (Catalogue no. 21-603-UPE, \$26/\$52) is now available. The January-March 2001 issue of *Farm cash receipts* (Catalogue no. 21-001-XIB, \$15/\$48) is also now available.

For more information on net farm income, contact Agriculture Division: Gail-Ann Breese at (204) 983-3445; gail-ann.breese@statcan.ca; or Bernie Rosien at (613) 951-2441; bernie.rosien@statcan.ca. For more information on farm cash receipts, contact Kimberley Boyuk, Agriculture Division, at (613) 951-2510; kimberley.boyuk@statcan.ca.

■ UPCOMING CONFERENCE

■ *Symposium 2001*

*Achieving Data Quality in a Statistical Agency: A Methodological Perspective
XVIIth International Symposium on
Methodological Issues
October 16-19, 2001, Hull, Quebec*

With its eighteenth annual symposium, Statistics Canada continues its series of conferences on methodological issues, attracting statisticians, researchers, academics, and data analysts and others interested in meeting the challenges of a statistical agency. *Symposium 2001* will feature both invited and contributed sessions, and will provide an ideal forum for exchanging experiences and knowledge of methods to achieve data quality. Papers of this conference will be published in the proceedings of the symposium.

The conference will host representatives from many organizations, such as the Australian Bureau of Statistics, Eurostat, INSEE, ISTAT, OECD, Statistics Finland, Statistics Netherlands, Statistics Sweden, UNESCO, the U.S. Bureau of the Census, the U.S. Bureau of Labor Statistics, and the U.S. Center for Health Statistics.

The symposium will be held at the Palais des Congrès in Hull, Quebec, just minutes from downtown Ottawa. For more information, contact Simon Cheung, Household Survey Methods Division, Statistics Canada, R.H. Coats Building, 16th floor, Ottawa, Ontario, Canada, K1A 0T6; (613) 951-1482; fax: (613) 951-3100; symposium2001@statcan.ca.

Perspectives

S E R V I C E S I N D I C A T O R S

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To order, write to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada, or contact the nearest Statistics Canada Regional Reference Centre listed in this publication.

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Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Annual Surveys—Service Industries
Frequency: Annual
Contact: Lucie Lussier
(613) 951-0410

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-4090

Survey of Employment, Payrolls and Hours

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources
Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Financial Security

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General social survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembri
(613) 951-9502

Quarterly Survey of Trusted Pension Funds

Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Client Services
(613) 951-7608

Annual surveys—Service industries

The following charts and tables highlight the survey program of Statistics Canada's Service Industries Division. These surveys collect and publish data for various service industries, classified according to the North American Industry Classification System (NAICS).

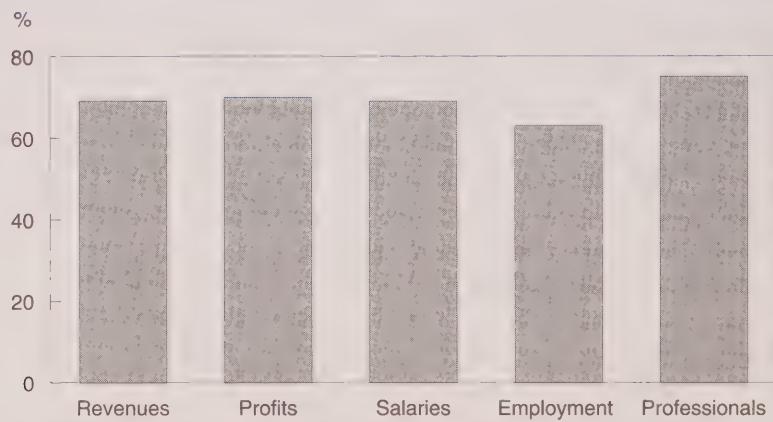
NAICS replaces the separate systems formerly used by Canada, the United States, and Mexico and provides a common framework for the collection of economic and financial data. NAICS is based on a production-oriented, or supply-based framework in which establishments are grouped into industries according to similarity in the processes used to produce goods and services. The Canadian version groups economic activity into 20 sectors and 921 industries, superseding the 1980 Standard Industrial Classification. NAICS recognizes emerging industries and significantly expands the number of service producing industries.

In addition to the adoption of NAICS, Statistics Canada has redesigned its entire framework for conducting business surveys. Approximately 200 separate business surveys have been integrated into a single master survey program called the Unified Enterprise Survey (UES). The UES collects more industry and commodity detail at the provincial level than was possible previously and avoids overlap between different survey questionnaires. The highlighted service industries form part of the UES program. Selected industries are shown (with their corresponding NAICS code), accompanied by a relevant chart or table. For more information about the survey program and data from the Service Industries Division, contact Lucie Lussier at (613) 951-0410 or lucie.lussier@statcan.ca.

Accounting and Bookkeeping Services (5412)

Establishments primarily engaged in providing accounting, assurance, consulting, taxation and bookkeeping services.

Accounting and bookkeeping services—Large* firms' industry share



Source: Survey of Accounting and bookkeeping services, 1998

* Firms with annual revenue greater than \$10 million.

Advertising and Related Services (5418)

Establishments primarily engaged in creating mass-media advertising or public relation campaigns; placing advertising in media for advertisers or advertising agencies; selling media time or space to advertisers or advertising agencies for media owners; creating and implementing indoor or outdoor display advertising campaigns; creating and implementing direct mail advertising campaigns; delivering (except by mail) advertising materials or samples; creating and implementing specialty advertising campaigns; providing related services, such as sign painting and lettering, welcoming services and window trimming services.

Advertising and related services—Revenues and expenses (all firms), 1998

	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
\$ millions				%
Advertising agencies	1,789	649	1,619	9
All other services related to advertising	1,885	544	1,735	8
Total	3,674	1,194	3,354	9

Source: Survey of Advertising and Related Services

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Architectural Services (54131)

Establishments primarily engaged in planning and designing the construction of residential, institutional, leisure, commercial and industrial buildings and other structures by applying knowledge of design, construction procedures, zoning regulations, building codes and building materials.

Architectural services industry—Employment and salaries, wages and benefits, 1998

	Employment				Salaries, wages and benefits
	Total	Full-time employees	Part-time employees	Working proprietors	
\$'000					
Canada	7,058	5,974	764	320	369,392
Newfoundland	48	47	1	0	2,384
Prince Edward Island	9	8	1	0	x
Nova Scotia	185	158	21	6	9,147
New Brunswick	155	145	8	2	7,228
Quebec	1,203	1,043	117	43	64,656
Ontario	2,909	2,545	277	87	156,961
Manitoba	193	162	18	13	9,082
Saskatchewan	195	163	14	18	10,442
Alberta	719	558	136	25	37,250
British Columbia	1,419	1,125	170	124	70,520
Yukon	5	4	0	1	x
Northwest Territories	18	16	1	1	x

Source: Survey of Architectural Services

Arts, Entertainment and Recreation (71)

Establishments that operate facilities or provide services to meet the cultural, entertainment and recreational interests of their patrons (excludes gambling industries).

Arts, entertainment and recreation—Revenues and expenses (all firms), 1998

	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
\$ millions				
Performing arts companies	901	275	816	9
Spectator sports	1,582	707	1,703	-8
Amusement parks and arcades	446	124	425	5
Golf courses and country clubs	1,622	578	1,487	8
Skiing facilities	541	120	449	17
Fitness and recreational sports centres	818	261	770	6
Marinas, bowling centres and all other amusement and recreation industries	1,722	402	1,653	4
Total	7,632	2,466	7,301	4

Source: Survey of Arts, Entertainment and Recreation

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Automotive Equipment Rental and Leasing (5321)

These establishments are primarily engaged in renting or leasing vehicles, such as passenger cars, passenger vans, trucks, truck tractors, buses, semi-trailers, utility trailers and recreational vehicles.

Automotive equipment rental and leasing services—Revenues and expenses (all firms), 1998

Establish- ments	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
No.		\$ millions		%
Total	2,701	4,168	637	3,906

Source: Survey of Automotive Equipment Rental and Leasing Services

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Commercial and Industrial Machinery and Equipment Rental and Leasing (5324)

These establishments are generally involved in providing capital investment-type equipment, without operator, and typically serve businesses.

Commercial and industrial machinery and equipment rental and leasing—Revenues and expenses (all firms), 1998

	Establishments	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
	No.	\$ millions			%
Total	4,043	4,030	744	3,516	13

Source: Survey of Commercial and Industrial Machinery and Equipment Rental and Leasing

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Consumer Goods Rental (5322/5323)

Establishments primarily engaged in renting or leasing personal and household goods or a range of consumer, commercial and industrial equipment for a short period of time. They typically operate from conveniently located retail-like facilities.

Consumer goods rental—Revenues and expenses (all firms), 1998

	Establishments	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
	No.	\$ millions			%
Consumer goods rental	4,600	1,629	426	1,629	0
General rental centres	1,500	344	72	313	9
Total	6,100	1,973	497	1,943	2

Source: Survey of Consumer Goods Rental

* Fees paid to contract employees are not included.

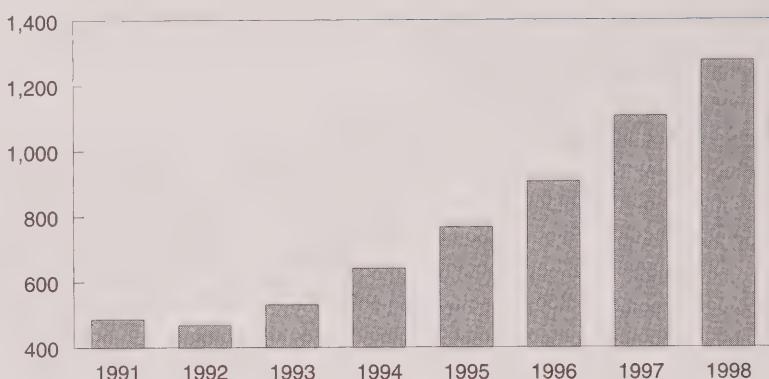
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Employment Services (5613)

Establishments primarily engaged in listing employment vacancies and selecting, referring and placing applicants in employment, either on a permanent or temporary basis; and establishments primarily engaged in supplying workers for limited periods of time to supplement the workforce of the client firm.

Employment services—Revenue for the top 20 firms

Total revenue (\$ millions)



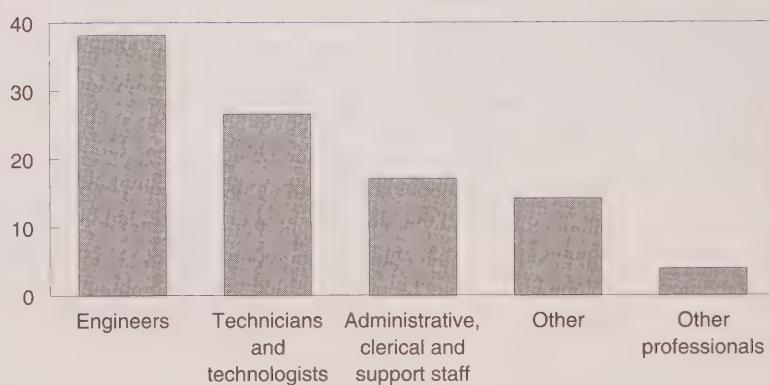
Source: Survey of Employment Services

Engineering Services (541330)

Establishments primarily engaged in applying principles of engineering in the design, development and utilization of machines, materials, instruments, structures, processes and systems.

Engineering services—Employment by category

%

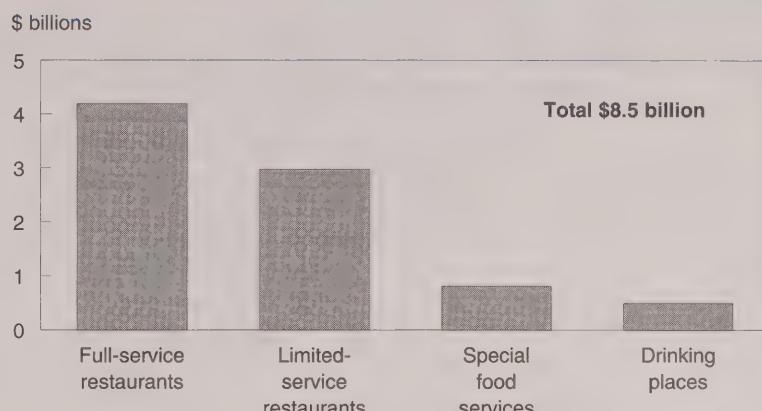


Source: Survey of Engineering Services, 1998

Food Services and Drinking Places (722)

Establishments primarily engaged in preparing meals, snacks and beverages, to customer order, for immediate consumption on and off the premises. This subsector does not include food service activities that occur within establishments such as hotels, civic and social associations, amusement and recreation parks, and theatres. However, leased food-service locations in facilities such as hotels, shopping malls, airports and department stores are included.

Food services and drinking places industry—Salaries and wages



Source: Survey of Food Services and Drinking Places, 1998

Management, Scientific and Technical Consulting

Establishments primarily engaged in Administrative Management and General Management Consulting Services (541611); Human Resource and Executive Search Consulting Services (541612); Other Management Consulting Services (541619); Environmental Consulting Services (54162); and Other Scientific and Technical Consulting Services (54169).

Management, scientific and technical consulting—Revenues and expenses (all firms), 1998

	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
		\$ millions		%
Management consulting	5,736	1,911	4,451	22
Scientific and technical consulting	940	312	753	20
Total	6,676	2,223	5,204	22

Source: Survey of Management, Scientific and Technical Consulting

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Personal Services (812)

Establishments provide personal care services, funeral services, laundry services and other services, such as pet care and photo finishing. Operators of parking facilities are also included.

Personal services—Revenues and expenses (all firms), 1998

	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
\$ millions				%
Personal care services	2,487	1,004	2,249	10
Funeral services	1,170	338	1,050	10
Laundry services	1,481	567	1,379	6
Other personal services	1,169	268	1,070	8
Total	6,306	2,176	5,747	9

Source: Survey of Personal Services

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Real Estate Rental and Leasing and Property Management Services

This industry comprises Lessors of Residential Buildings and Dwellings (except Social Housing Projects) (531111); Lessors of Non-Residential Buildings (except Mini-Warehouses) (531120); Self-Storage Mini-Warehouses (531130); Lessors of Other Real Estate Property (531190); and Real Estate Property Managers (531310).

Real estate rental and leasing and property management industry*—Revenues and expenses, 1998

	Establish- ments	Revenues	Salaries, wages and benefits	Total expen- ses
			\$ millions	
Canada	66,588	31,086	2,508	26,680
Newfoundland	587	155	32	133
Prince Edward Island	274	81	11	71
Nova Scotia	1,417	540	68	439
New Brunswick	1,171	358	26	326
Quebec	15,799	7,672	532	6,646
Ontario	24,336	12,794	907	10,923
Manitoba	1,847	697	70	618
Saskatchewan	1,831	574	81	503
Alberta	6,772	2,660	243	2,226
British Columbia	12,286	5,467	505	4,718
Yukon	97	23	4	20
Northwest Territories	171	65	17	56

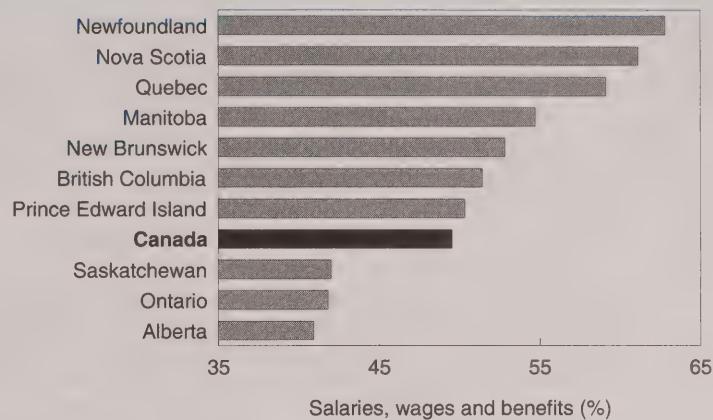
Source: Survey of Real Estate Rental and Leasing and Property Management Service Industry

* Excludes social housing.

Real Estate Agents, Brokers, Appraisers and Other Real Estate Activities

Establishments primarily engaged in renting, buying and selling real estate for others on a fee or commission basis. These establishments assist vendors by advertising and listing properties and conducting open houses for prospective buyers, assist prospective buyers by selecting, visiting and making purchase offers. They may also rent or lease properties on behalf of clients (531210). They may also appraise the value of real estate and prepare appraisal reports for creditors, insurance companies, courts, buyers, sellers or auctioneers (531320).

Real estate appraisers—Salaries, wages and benefits as a percentage of total expenses



Source: Survey of the Real Estate Agents, Brokers, Appraisers and other Real Estate Activities Industries, 1998

Software Development and Computer Services

This survey collects data from businesses engaged in providing computer systems design and related services (541510), data processing services (514210), on-line information services (514191), and software publishing (511210) in Canada.

Computer systems design and related services—Employees and salaries, wages and benefits, 1998

	Firms	Employees	Salaries, wages and benefits
			\$ millions
Canada	31,651	82,478	4,468
Newfoundland	90	556	28
Prince Edward Island	22	92	3
Nova Scotia	298	760	41
New Brunswick	210	1,223	74
Quebec	5,606	21,790	1,024
Ontario	16,746	39,585	2,249
Manitoba	399	1,084	53
Saskatchewan	440	1,209	73
Alberta	4,228	9,494	543
British Columbia	3,580	6,653	377
Yukon	15	13	1
Northwest Territories	19	19	1

Source: Survey of Software Development and Computer Services

Specialized Design Services

This industry is composed of establishments engaged primarily in Landscape Architectural Services (541320); Interior Design Services (54141); Industrial Design Services (54142); Graphic Design Services (54143); and Other Specialized Design Services (54149).

Specialized design services—Revenues and expenses (all firms), 1998

	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
\$ millions				
Landscape architecture	119	50	98	18
Interior design	377	108	308	18
Industrial design	116	37	93	20
Graphic design	871	263	730	16
Other specialized design	80	21	65	19
Total	1,563	478	1,300	17

Source: Survey of Specialized Design

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

Surveying and Mapping Services

Establishments primarily engaged in Geophysical Surveying and Mapping Services (54136) and Surveying and Mapping (except Geophysical) Services (54137).

Surveying and mapping services—Revenues and expenses, 1998

Establishments	Revenues	Salaries, wages and benefits	Operating expenses
		\$ millions	
Canada	2,743	1,200	481
Newfoundland	49	11	5
Prince Edward Island	9	2	1
Nova Scotia	107	26	12
New Brunswick	60	15	6
Quebec	547	116	49
Ontario	408	217	102
Manitoba	38	12	4
Saskatchewan	83	36	16
Alberta	970	639	238
British Columbia	458	122	48
Territories	15	5	2

Source: Survey of Surveying and Mapping Services

Travel Arrangement and Reservation Services (5615)

This survey collects detailed characteristics such as client base, revenue by type of service, detailed expenses items and employment data from retail travel agencies, tour operators, wholesalers, and other miscellaneous service industries in Canada.

Travel arrangement and reservation services—Revenues and expenses (all firms), 1998

	Establishments	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
	No.		\$ millions		%
Travel agencies	5,057	1,778	653	1,658	7
Tour operators	1,022	4,255	229	4,063	5
Total	6,079	6,034	882	5,721	5

Source: Survey of Travel Arrangement and Reservation Services

* Fees paid to contract employees are not included.

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Traveller Accommodation (721)

Establishments such as hotels, motels, resorts, bed and breakfasts, outfitters, camping grounds, and other establishments providing accommodation for travellers.

Accommodation service industries—Revenues and expenses (all firms), 1998

	Establishments	Revenues	Salaries, wages and benefits*	Operating expenses	Profit before taxes**
	No.		\$ millions		%
Hotels and motor hotels	5,283	8,904	2,645	7,873	12
Motels	4,054	1,129	292	990	12
Other accommodation	6,584	1,245	335	1,152	7
Total	15,921	11,278	3,272	10,015	11

Source: Survey of Traveller Accommodation

* Fees paid to contract employees are not included.

** Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.

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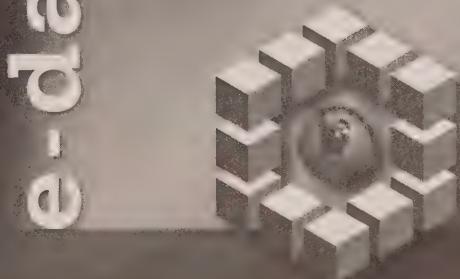
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Patrick Kieran

This article paints a portrait of those currently retiring before the age of 60. Early retirement rates are presented by class of worker, sex, level of education, industry, province, and job status.

14 The labour market in the week of September 11

Geoff Bowlby

A note on the effect of the September 11 terrorist attacks on New York City and Washington on the labour market in Canada, specifically absences from work and hours lost.

19 After the layoff

Diane Galarneau and Lori M. Stratychuk

This study looks at the results of permanent layoffs from full-time jobs. How long does it take laid-off workers to find a new job? What factors affect the length of joblessness? For those who are successful in finding a new job, what is the wage gap between the old job and the new one? What factors influence this wage gap?

30 Evolution of the Canadian workplace: work from home

Ernest B. Akyeampong and Richard Nadwodny

Using various surveys, this study examines the number of Canadians usually working from home over the past three decades.

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37 Trends in part-time job search

Berouk Terefe

Most analyses of part-time work naturally focus on employed persons, but the Labour Force Survey also asks the unemployed whether they are seeking a full- or part-time job. This article looks at trends in job seeking between 1976 and 2000, and the contribution of demographic and other factors to changes in the overall shares of the two groups of seekers.

42 1999 income: an overview

Cathy Cotton, Philip Giles and Heather Lathe

A brief look at family incomes in 1999 and changes since 1990.

47 Fact-sheet on work absences

Ernest B. Akyeampong

An update on time lost from work.

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Highlights

In this issue

■ Early retirement trends ... p. 7

- Early retirement is now more common than a decade ago. Between 1987 and 1990, only 29% of people who recently retired did so before the age of 60. Between 1997 and 2000, that rate grew to 43%.
- The early retirement rate was much higher in the public sector than in the private sector. The most popular retirement age for public-sector employees was 55. Most private sector workers still retired at age 65 while the majority of self-employed retired even later.
- The Atlantic provinces had the highest early retirement rates, while the western provinces had the lowest. The many early retirements in the Atlantic provinces may be related to their higher unemployment rates.
- More women than men retire early. Two factors may be involved—the greater number of women in public-sector jobs and the two-year age difference between spouses.
- Early retirement was popular among people with higher levels of education and those with higher incomes. The early retirement rate was also high in industries with workers in utilities, public administration and educational services.
- People in the agriculture sector are the least likely to retire early. Workers in this industry are primarily self-employed. Also, many farmers do not earn high incomes and postpone retirement until they can collect Canada or Quebec Pension Plan benefits.

■ After the layoff ... p. 19

- From 1993 to 1997, the time taken to find a new job after a layoff declined. In 1993, only 27% of individuals who had been permanently laid off that year managed to find another job within three months, compared with 47% in 1997. This reflects the more favourable economic conditions at the end of the period, and a more rapid adjustment by workers.
- A strong link was found between the duration of joblessness and age. Men under 35 and women under 25 had the best chances of finding a new job after a layoff; however, the chances decreased with age. Women's chances were always worse than men's in the corresponding age group. Men aged 55 and over had a 66% lower chance of finding a job than men aged 16 to 24, whereas women aged 55 and over had a 77% lower chance.
- Individuals living alone and those without children—two factors likely to increase mobility—increased the chances of finding a new job by 30% and 24% respectively.
- Professionals and managers had the best chances of finding a new job after a layoff, whereas clerks, salespersons and people working in the service industry had the lowest. The chances were also less for those laid off from a long-held job (at least five years).
- Receipt of EI benefits tended to increase the duration of joblessness. Because the duration of benefits is limited under the program, the effect disappeared after a year.

- One year after a layoff, one in five individuals were unemployed, either because they had not found or had lost a new job. The proportion ranged from a high of 25% for individuals laid off in 1993 to a low of 15% for those laid off in 1996.

■ Evolution of the Canadian workplace: work from home ... p. 30

- In the year 2000, approximately 2.8 million (17%) Canadian workers (1.4 million or 10% of employees, and 1.4 million or 50% of the self-employed) did some or all of their work from home, up from 2.1 million (16%) in 1995.
- In 2000, work from home was slightly more common among male employees than among their female counterparts (10.6% versus 9.8%), and among part-time employees than full-timers (13.4% versus 12.8%). Higher-than-average incidences were also found among core-age (25-54) employees (12.0%), those with university degrees (22.7%, reflecting in part their occupations), and workers with pre school-age children (14.8%). Very low incidences were recorded among youths (4.6%), and employees with less than high-school education (3.9%).
- Because of operational considerations, the practice is more common among social science and educational workers, and least common among processing and manufacturing; construction; accommodation and food service; trades, transport and equipment-operating; and health workers.
- A large majority of home-based employees put in only a few hours of work at home each week—about 65% worked between one and 10 hours. Less than 3% put in more than 40 hours.
- Innovations in information technology in the past decade or two appear to have affected home-based workers more strongly. In 2000, use of the computer, e-mail, Internet and telephone for work purposes was much higher among home-based workers than among those who worked completely outside the home.

■ Trends in part-time job search

... p. 37

- In 2000, 1.1 million people were unemployed. Of these, 757,000 were looking for full-time jobs, 207,000 were seeking part-time work, and the rest (126,000) were either on temporary layoff or were starting a job in a few weeks.
- In phase with the business cycle, the share of full-time job seekers among the unemployed fluctuated between 75.0% and 81.7% from 1976 to 1996. This share plunged to 73.4% in 1997, and declined steadily thereafter to reach 69.5% in 2000. In contrast, the share for seekers of part-time work showed a slight but steady upward trend (from 11.7% to 14.8%) between 1976 and 1996. A large increase (to 17.3%) in 1997 was followed by increases in the next two years. The share stabilized at 19.0% in 2000. Changes to the Labour Force Survey questionnaire in 1997 were mainly responsible for the large changes in the full- and part-time job-seeking shares between 1996 and 1997.
- Focusing only on the 1976-to-1996 period, almost all (99%) of the overall increase in the share of the part-time job-seeking group can be attributed to a trend effect. Changes due to demographic factors had hardly any net effect on the increase. Youth accounted for all of the trend effect.
- Unemployed people seeking part-time work are a heterogeneous group. In 2000, the majority were women, were between the ages of 15 and 24, and had no children under 16.

What's new?

... p. 55

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Early retirement trends

Patrick Kieran

In the early 1970s, one in five Canadians was 50 or older. By 2008, one in three will fall into this age group. This reality has led many researchers to focus on the potential consequences of large-scale retirement from the workforce. Important questions about the future of the labour market abound. Will there be enough workers to ensure continued economic and social development? Will retirees be able to support themselves financially? Will there be enough taxpayers to support the full range of government services available today? The need for information on the aging workforce has never been stronger and will most likely continue to grow in the years to come.

The demographic reality facing the labour market is compounded by a trend towards earlier retirement (see *What is early retirement?*). Since 1976, the median retirement age has fallen from 65 to close to 60 as more and more Canadians are choosing retirement at a younger age. As the oldest members of the baby boom generation turn 54 in 2001, the expected large-scale exit of older workers from the labour market could soon begin.

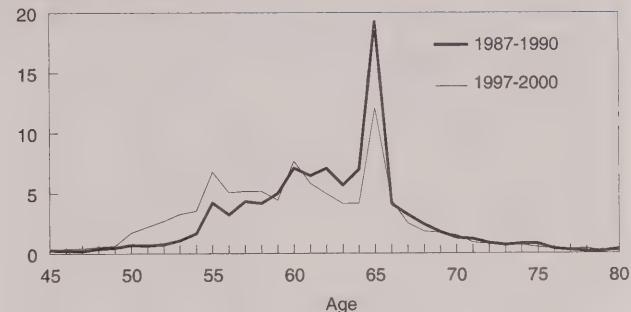
This article paints a portrait of those currently retiring before the age of 60. Early retirement rates are presented by class of worker, sex, level of education, industry, province, and job status.

Canadians are retiring earlier

Compared with the late 1980s, early retirement in Canada is now more common. Between 1987 and 1990, only 29% of people who recently retired did so before the age of 60. In the 1997-to-2000 period, which had similar economic growth, the proportion grew to 43%. As the early retirement rate has risen, 65 has become a less popular age at which to retire, yet it still remains the most common (Chart A). Between

Chart A: Canadians are retiring earlier

Retired from last job (%)



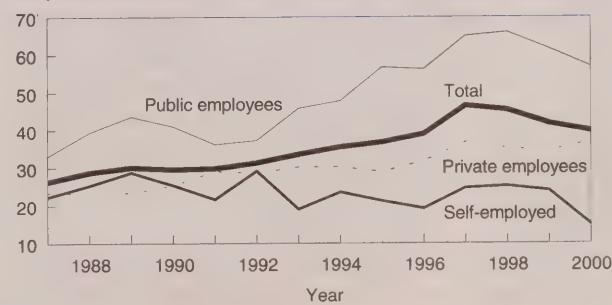
Source: Labour Force Survey

1987 and 1990, 19% of recent retirees left work at age 65. The proportion dropped to a 12% average for 1997 to 2000.

From 1998 to 2000, the early retirement rate fell, although early retirement was still much more common than a decade earlier. Early retirement in the public sector drove the overall trend (Chart B).

Chart B: Public sector drives the early retirement rate trend

Early retirement rate (%)



Source: Labour Force Survey

Patrick Kieran was with the Labour Statistics Division. For further information about this article, contact Geoff Bowlby at (613) 951-3325 or geoff.bowlby@statcan.ca.

What is early retirement?

Defining retirement is not straightforward (Gower, 1997). For purposes of this study, a very restrictive approach has been used. The Labour Force Survey (LFS) asks everyone who is not employed, but who had a job within the last 12 months, the reason for leaving their last job. Retirement is one possible answer. Some of these 'retirees' may in fact still be looking for work and others may re-enter the labour force some time in the future. All that is known for certain is that they are currently without a job and that they 'retired' from their last job.

Recent retirees are persons who worked within the previous 12 months and left their job because of retirement. Persons who retired before the 12-month limit are not included.

Early retirees are recent retirees under the age of 60.

The **early retirement rate** is the number of early retirees as a percentage of recent retirees.

Although Canada has no statutory retirement age, 60 was chosen because it probably meets normal expectations of 'early retirement', and is the minimum age at which Canada/Quebec Pension Plan benefits (other than for disability) are payable. Workers who begin collecting benefits between 60 and 64 are penalized 0.5% on their monthly benefits for each month before their 65th birthday that the pension begins. Retirees who begin receiving payments at 65 are eligible for full pension benefits. Old Age Security and the Guaranteed Income Supplement are additional retirement income systems that help to support Canadians 65 and over.

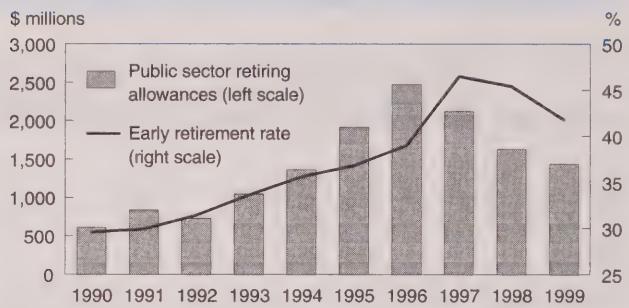
Government downsizing during the mid 1990s prompted many older workers to take early retirement packages, pushing the early retirement rate in the public sector up to 65% in 1997. The overall rate peaked in this year, hitting 46%. Since then, however, the rate has fallen, reaching 40% in 2000. Still, the proportion of recent retirees leaving work before 60 remained about 10 percentage points higher than at the beginning of the 1990s.

Retiring allowance¹ data confirm the effect of government downsizing on retirement (Chart C). From 1990 to 1996, severance pay disbursed to public-sector employees quadrupled. Payments hit a peak of \$2.5 billion in 1996 and subsequently dropped to less than \$1.5 billion by 1999,² following the same pattern as the early retirement rate.

Public sector workers retire earliest

The early retirement rate is much higher in the public sector than in the private sector, even though the public-sector rate has fallen in recent years. Between

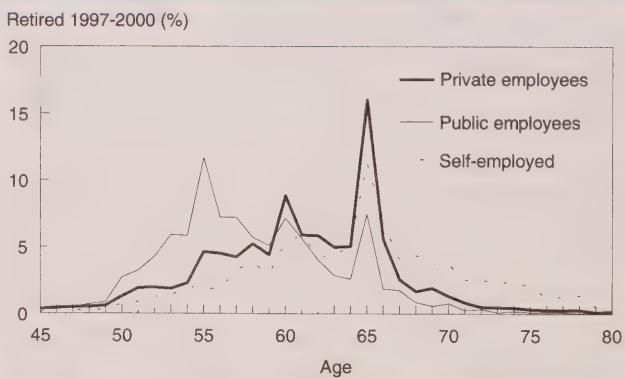
Chart C: Early retirement rate peak tied to government downsizing



Sources: Labour Force Survey; Canada Customs and Revenue Agency

1997 and 2000, 63% of public-sector recent retirees left their job before 60—nearly twice the rate of the private sector. This can probably be attributed to the more favourable pension benefits and early retirement plans offered to public servants. Some public employees with a minimum of two years of experience in the public service can retire as early as 50 and still receive an annual allowance. Those with tenures of 30 years or more are eligible for pension benefits at age 55. The benefits available at 55 made it the most popular retirement age for public-sector employees (Chart D). Private-sector employees tended to retire at 65. The self-employed retired even later—less than one-quarter stopped working before age 60, with only about one-tenth opting for age 65. Self-employment

Chart D: Public sector employees retire earliest



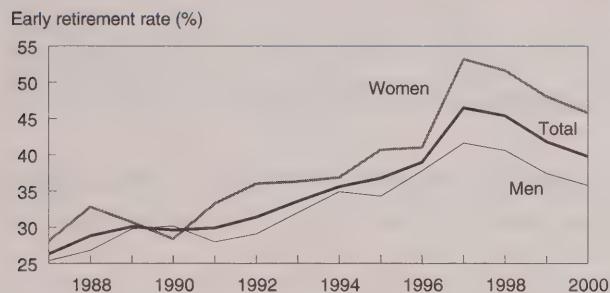
Source: Labour Force Survey

allows for a degree of flexibility not available to public or private employees. The self-employed have the option of reducing their activity gradually as they grow older. Furthermore, they are less likely to have a private pension plan, and some may continue to work because they have no choice.

More women than men retiring early

Women are much more likely than men to retire early (Chart E). Over the 1997-to-2000 period, approximately half of Canadian women retired before the age of 60 compared with just under 40% of men. Furthermore, greater early retirement in some public-sector industries during the late 1990s appears to have increased the gap between the early retirement rates of men and women.

Chart E: More women than men retiring early



Source: Labour Force Survey

Between 1987 and 1996, the early retirement rate difference between men and women was less than 4 percentage points. The gap grew to a 12-point average in the following four years. While the rate for men rose by 4 points from 1996 to 1997, early retirement for women jumped from 41% to 53%. This disparity may be explained by changes in certain female-dominated industries in the mid-1990s. From 1996 to 1997, early retirement in health care and educational services jumped 21 points (from 37% to 58%) and 13 points (from 53% to 66%) respectively. This is significant because more than one-quarter of all employed women are involved in these two industries.

Another factor may be the difference in marriage age for men and women. In most married couples, the husband is older than the wife—since 1974, the difference has remained steady at approximately two years. When it comes time to retire, many couples do so at the same time (Gower, 1998). If the husband is 60 or over, the wife may be under 60 and therefore counted as an early retiree. In 1997, one-third of married couples retired ‘together’ (that is, less than one year apart). Among these couples, the wife’s average age was 58.5 versus 60.7 for the husband (Gower, 1998). An additional 37% of married women who retired in 1997 did so more than one year ahead of their spouses. The average age of these women was 56.4, compared with 62.2 for their husbands. These women are counted as early retirees, but their husbands are not.

Early retirement increases with income and education

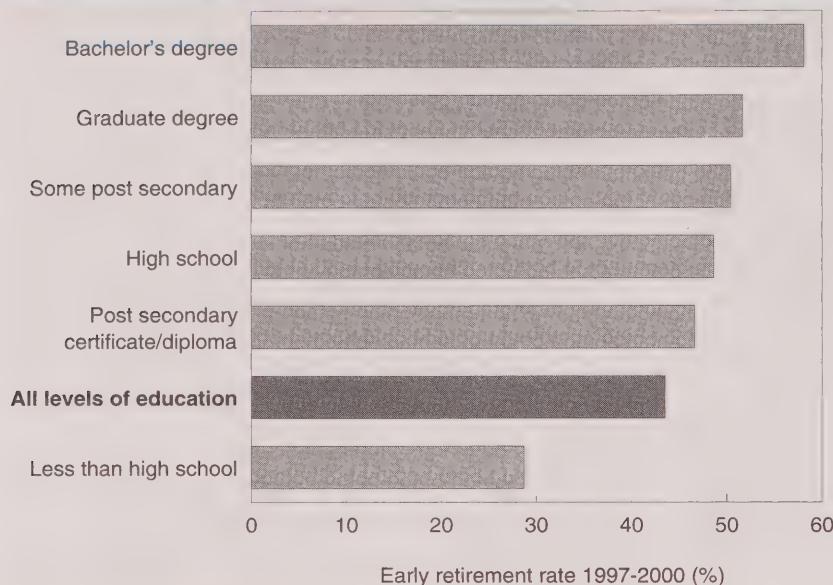
Highly educated workers seem more likely to retire early than those with less formal education (Chart F). Less than 29% of recent retirees with less than a high-school diploma left work before 60. Those with a bachelor’s or graduate degree had early retirement rates of 58% and 52% respectively. Recent retirees with moderate levels of education fell in-between.

Predictably, Canadians with higher levels of educational attainment have higher earnings. In 2000, employees with a high-school diploma averaged \$14.69 per hour. Those with a community-college diploma or certificate earned \$17.32, and those with a bachelor’s degree \$21.90.

As income level rises, so does the likelihood of saving, making early retirement more feasible. In 1999, only 15% of tax filers with a total income of less than \$20,000 contributed to a registered retirement savings plan or were covered by an employer-sponsored pension plan. About 63% of tax filers with total incomes of \$20,000 to \$39,999 saved. This proportion climbed to 92% for those with total incomes over \$60,000 (Statistics Canada, 2001).

Despite the overall trend, recent retirees with a bachelor’s degree had significantly higher early retirement rates than those with a master’s or doctorate (58% compared with 52%). This could be explained in part by the additional years the latter group spends in school, which translates to a later career start and, presumably, a later finish.

Chart F: Highly educated more likely to retire early



Source: Labour Force Survey

The extremely low early-retirement rates in agriculture can be explained by a more detailed class-of-worker analysis. Workers in this industry are primarily self-employed (69% compared with the overall average of 17%). Also, many farmers are lower-income workers—average earnings for agricultural employees are less than \$11 per hour compared with the overall mean of \$17. Some farmers and their staff may have no choice but to postpone retirement until Canada or Quebec Pension Plan benefits can be collected.

Moreover, the nature of the farming business may discourage early retirement. Traditionally, family farms were passed down through generations as the primary means of income for the family. As farms became more mechanized,

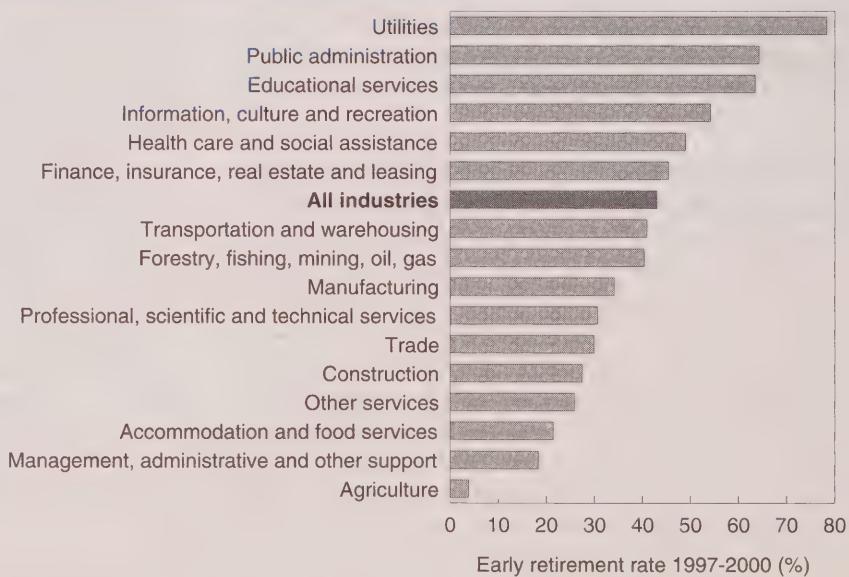
Early retirement by industry

In line with the trend towards early retirement in the public sector, the highest early retirement rates are found in utilities, public administration, and educational services, with five-year average rates of 78%, 64%, and 63%, respectively (Chart G). Agriculture exhibits the lowest early retirement rate, at just 4%.

Influence of class of worker

The trend in early retirement by industry can be explained in part by the class of worker found in each industry—for example, a clear relationship exists between early retirement and the proportion of public-sector workers in an industry (Table 1). Industries with the lowest early retirement rates were also the ones with the lowest proportion of public-sector workers; those with the highest early retirement rates had the highest proportion.

Chart G: Utilities, public administration and education have the most early retirees



Source: Labour Force Survey

Table 1: Public sector composition and early retirement rate by industry, 1997-2000

	Percent public	Early retirement rate %
Agriculture	0.0	3.8
Accommodation and food services	0.1	21.4
Other services	0.2	25.8
Manufacturing	0.3	34.1
Professional, scientific and technical services	0.9	30.6
Trade	0.9	29.9
Management, and administrative and other support services	0.9	18.3
Construction	2.4	27.4
Forestry, fishing, mining, oil and gas	3.9	40.3
Finance, insurance, real estate and leasing	4.8	45.4
Information, culture and recreation	13.0	54.1
Transportation and warehousing	18.7	40.9
Health care and social assistance	48.6	48.9
Utilities	71.6	78.3
Educational services	85.3	63.4
Public administration	100.0	64.2

Source: Labour Force Survey

less labour was needed. At the same time, many children began to leave the family farm in pursuit of other opportunities—over one-quarter of Canada's population lived on a farm in 1941, compared with just 2% in 1996. Studies comparing 1971 and 1996 showed an increased exodus of young people from rural areas across Canada (Tremblay, 2001). Many aging farmers may no longer have the option of handing the reins over to their offspring; consequently they work into their 60s and beyond to maintain the family business.

Early retirement by province

The Atlantic provinces demonstrate much higher early retirement rates than the rest of the country with Newfoundland, Nova Scotia, and New Brunswick among the top four provinces (Chart H). With 59% of its recent retirees leaving

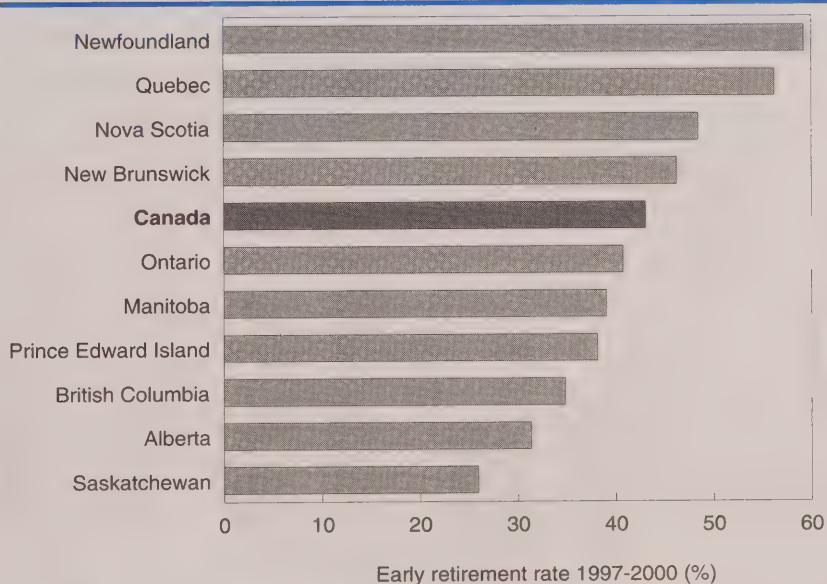
early, Newfoundland exhibited the highest rate in Canada. The Prairie provinces fell at the bottom of the list, none with a rate over 39%. Saskatchewan boasted the lowest rate with only one-quarter of its recent retirees leaving before age 60.

Agriculture content a good indicator

The differences can be explained in part by the industry mix in each province. One of the major factors contributing to the high early retirement rates in Newfoundland, Nova Scotia, and New Brunswick may be the very low ratio of agricultural workers in each province's labour force (Table 2). In Saskatchewan, which had the lowest early retirement rate, one in seven workers were involved in the farming industry. The proportion of agricultural workers in each province influences early retirement rates because very few agricultural workers retire early.

Early retirement tied to provincial unemployment

Another possible explanation of provincial differences may be the economic situation in each jurisdiction. The strong relationship between unemployment and early retirement suggests some Atlantic

Chart H: Early retirement highest in Atlantic provinces, lowest in western Canada

Source: Labour Force Survey

Table 2: Agriculture content and early retirement rate by province, 1997-2000

	Share of work force in agriculture	Early retirement rate %
Newfoundland	0.5	59.2
British Columbia	1.6	34.8
Nova Scotia	1.7	48.4
Ontario	1.9	40.7
Quebec	1.9	56.2
New Brunswick	1.9	46.2
Alberta	5.4	31.3
Manitoba	7.0	39.0
Prince Edward Island	7.0	38.1
Saskatchewan	14.2	25.9

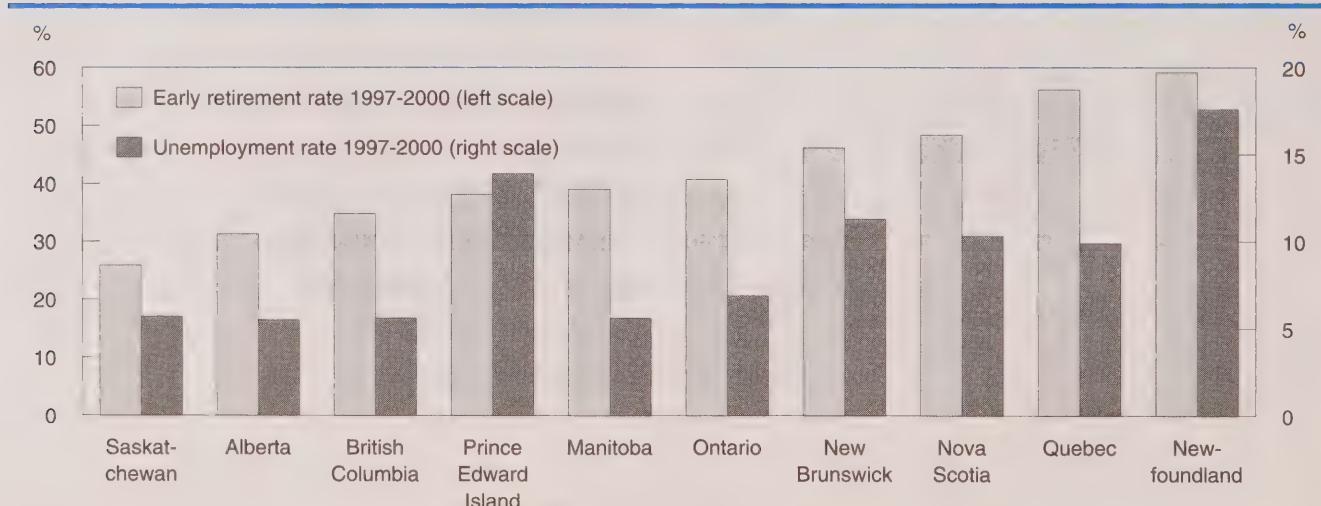
Source: Labour Force Survey

Canadians may have been forced to leave the workforce before turning 60. Whereas unemployment and early retirement rates were highest in the east, both rates were lowest in western Canada (Chart I). Notably, Newfoundland had a 17.6% unemployment rate combined with a 59% early retirement rate. These percentages were well above the 1997-to-2000 national averages of 8% and 43%. In contrast, Alberta, Saskatchewan, Manitoba and British Columbia experienced unemployment of less than 6% and early retirement rates of around one-third.

A previous study demonstrated the link between high rates of early retirement and economic factors by comparing the 1990-1992 recession with a three-year pre-recession period (Sironian, 1993). Early retirement due to layoffs, company closures, and early retirement packages rose significantly during the recessionary period. Today, provinces with weaker economic growth may see older workers forced to retire early. Furthermore, older workers who are laid off may find themselves competing with younger and better-educated workers for jobs in new and growing industries. Rather than start a difficult search for a new job, some older workers may choose early retirement.

Pension coverage influences provincial trend

While economic factors help to explain early retirement patterns in most provinces, some stand out against the trend. Prince Edward Island's unemployment rate stood at nearly double the national rate, yet its early retirement rate was among the lowest. This may be attributable to the relatively low proportion of workers in the province who are covered by an employer-sponsored pension plan—in 1997, only 24% of the provincial labour force as compared with 33% nationally. Pension plans also help to explain the high early-retirement rates in Newfoundland and Quebec where coverage rates were 39% and 35% respectively.

Chart I: Early retirement tied to provincial unemployment

Source: Labour Force Survey

Early retirement higher among full-time workers

Canadians who worked full time in their last job had higher early-retirement rates than those who worked part time—46% of recent retirees who had worked full time quit before 60 compared with 30% of part-time recent retirees. This is no surprise, as full-time workers earn more, and therefore may be able to save more for retirement. In fact, 58% of 1996 part-time or part-year employees earned less than \$10,000 per year. Part-timers may also lack many of the retirement benefits granted to their full-time counterparts. Only one-fifth of part-time workers received an employer-sponsored retirement, compared with nearly three-fifths of full-timers. The lower early-retirement rates among part-time workers may also reflect a shift into part-time employment by older workers. Part-time work facilitates the transition to retirement, unlike full-time work, which brings an abrupt halt to working life (Walsh, 1999).

Summary

As a large-scale exit of baby boomers from the workforce looms, understanding trends in retirement has never been so important. Canadians today are retiring much earlier than only 10 years ago; however, government downsizing during the 1990s may have been a primary reason for the surge in early retirement of the last decade. After the 1997 peak, early retirement rates tapered off, suggesting that the growth seen in the 1990s may not be indicative of the future.

The propensity to retire early is driven not only by trends in public-sector employment, but also appears to be related to financial factors—specifically, the existence of a pension plan or other means of supplementary retirement income. Retirees with accumulated savings or pension benefits are more likely to retire before 60 because they need not rely on Canada or Quebec Pension Plan payments.

It is impossible to tell if early retirement rates will continue to rise in the years to come or follow the downturn seen since 1997. The change in trend makes any long-term projection based on recent behaviour uncertain. Regardless, the age at which workers choose to retire in the coming decades will have social and economic implications for the entire country.

Notes

1 A retiring allowance (or severance pay) is an amount paid to officers or employees at the time, or after, they retire from an office or employment in recognition of long service, or for the loss of office or employment. Retiring allowances include payments for unused sick leave credits and amounts received for termination of employment, but exclude superannuation or pension benefits, amounts received as a result of an employee's death, or benefits derived from certain counselling services.

2 The different reference periods of the sources may account for the differences in peak years between the early retirement rate and retiring allowance data. In the LFS, retirees who left work within the last 12 months are considered to have retired in the year of the survey, which may not necessarily be the year in which they retired. For example, respondents who retired in July 1996 may have been surveyed in June 1997. Even though they left work in 1996, they are considered 1997 recent retirees. Many public sector workers who retired in 1996 could have been recorded as 1997 recent retirees. Retiring allowance data are from Canada Customs and Revenue Agency and include only payments made between January and December of one year. Therefore, the 1996 retiring allowance peak could coincide directly with the 1997 early-retirement rate peak.

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The labour market in the week of September 11

Geoff Bowlby

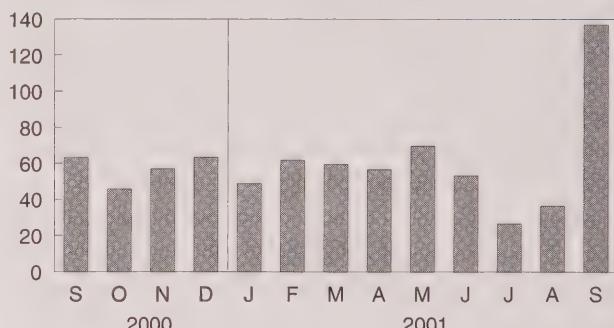
THE SEPTEMBER 11 TERRORIST ATTACKS in New York and Washington occurred during the Labour Force Survey (LFS) reference week of September 9 to 15. The data collected allow an early but incomplete look at how the Canadian labour market and economy were affected in the days immediately following the attacks.

It is not possible to quantify the effect of the attacks on overall levels of employment and unemployment. The LFS considers people who worked at any time during the reference week to be employed, even if they were laid off at some point during the week. Therefore, those who worked early in the week but were told not to come into work following the attacks would be considered employed. As a result, most of the effect on employment and unemployment is not reflected in the September estimates.

The effect of the attacks was more evident in a sharp increase in days lost, particularly in certain industries. Over 136,000 employees missed part of the work week for 'other' reasons—about 83,000 more than the average month over the last year. The industries in which most time was lost tended to be concentrated in downtown locations (for example, banking) or near airports (air transportation).

Employee absences for part of the week for 'other' reasons jumped in September 2001.

Part-week absences for 'other' reasons ('000)



Source: Labour Force Survey

Even though hours were lost in many industries, some workers worked longer-than-normal hours. As well, full-time job gains were made in other parts of the economy. As a result, there was a slight increase in total actual hours worked in Canada that week (+0.4%, seasonally adjusted).

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Industries losing work hours

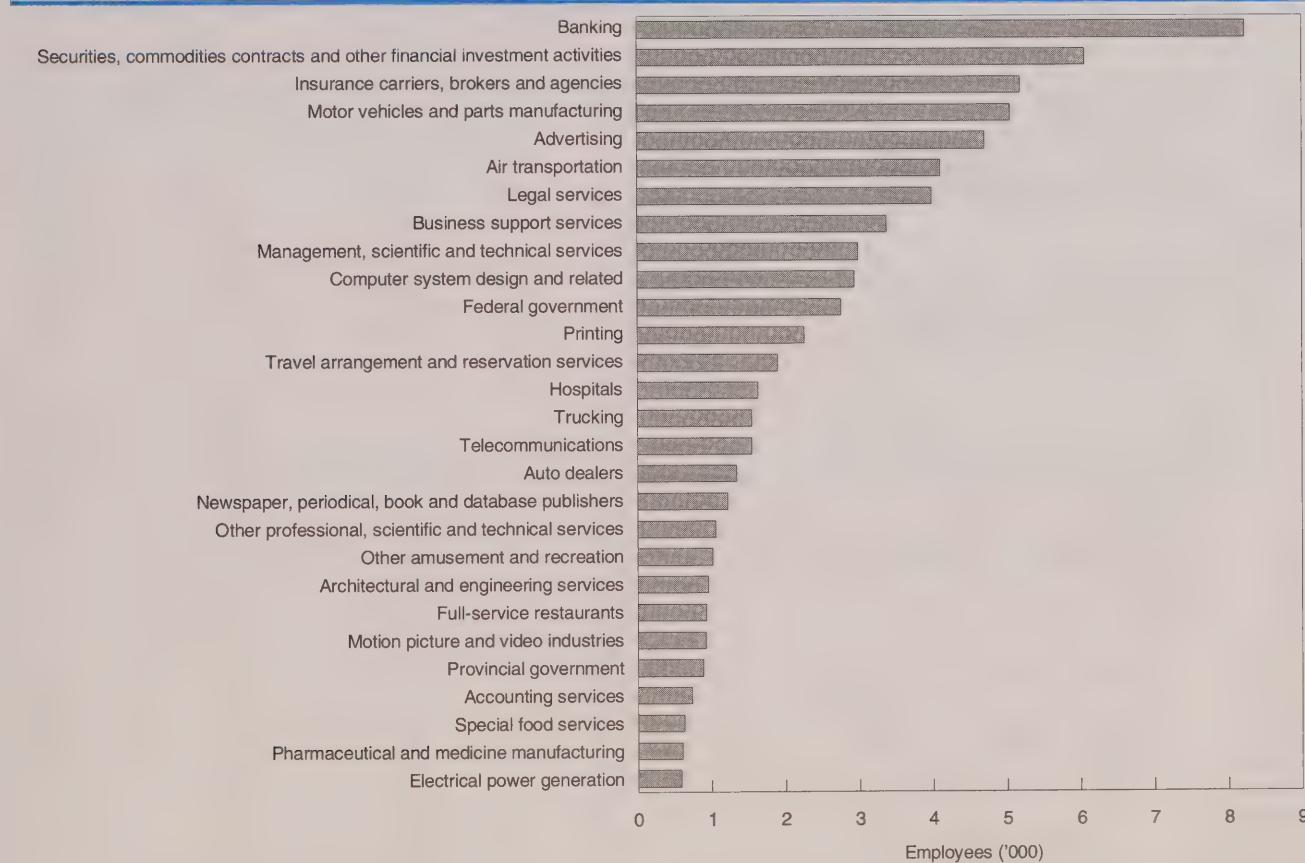
Most employees absent from work during the week of September 9 to 15 were working in banking, investment activities and insurance. As expected, a very large number of people in the air and truck transportation industries also lost hours.

In total, an estimated 1.4 million hours were lost by people who missed part of the week for 'other' reasons—approximately 841,000 hours more than normal. This was the largest loss of hours caused by extraordinary events since the 1998 ice storm in

eastern Canada. At that time, about 150,000 more people than normal could not make it in to work for the entire reference week, and another 390,000 attended for only part of the week; the result was about 10.4 million hours lost. The number of hours lost during the week of September 9 was similar to the number lost following the Mississauga, Ontario, train derailment in 1979.

Almost all of the lost hours occurred in less than 30 industries. By far the largest loss came from investment activities, where more than 100,000 hours were lost as a result of the closing of the Toronto Stock

A wide range of industries had increases* in part-week absences for 'other' reasons.



Source: Labour Force Survey

* Compared with the average for September 2000 to August 2001.

Exchange and other stock markets across the country. The loss amounted to over 20 hours per absent employee.

Air transportation experienced the next largest loss. In this industry, which includes airlines and airport support workers, about 75,000 hours were lost when air traffic was grounded—over 18 hours per absent employee. A very large number of hours were also lost in the banking sector—72,000 hours or 8.8 hours per absent employee.

About 5,000 more employees than normal were absent from work in the motor vehicle and parts manufacturing industry for ‘other’ reasons, resulting in 61,000 hours lost. During the week of the attacks, some manufacturers reported not having received enough materials to keep plants open. In motor-vehicle manufacturing, an additional 3,400 people lost part of the week because of material shortages at the plants—3,000 more than the average in the previous 12 months. In total, approximately 8,000 people lost hours in the manufacturing sector.

Employment and actual hours worked in disaster-affected industries, September 2001

Disaster-affected industries	Increased hours lost* for ‘other’ reasons		Abnormal change**	
	Total	Per absent employee	Actual hours	Employment
			'000	'000
Disaster-affected industries	718.6	10.4	-3,894.1	-60.5
Securities, commodities contracts and other financial investment activities	122.6	20.2	-202.6	6.3
Air transportation	74.7	18.2	162.7	4.8
Banking	72.4	8.8	-626.4	-6.5
Business support services	60.7	18.0	-92.2	-4.1
Motor vehicles and parts manufacturing	60.6	12.0	-463.9	2.1
Computer system design and related	39.8	13.6	-430.0	-21.7
Insurance carriers, brokers and agencies	34.7	6.7	-318.0	-2.9
Trucking	26.8	17.3	-520.3	-2.9
Advertising	26.8	5.7	301.7	9.8
Legal services	21.7	5.4	235.7	-0.1
Federal government	17.7	6.4	-453.0	-2.2
Architectural and engineering services	15.4	16.2	453.4	8.0
Full-service restaurants	15.3	16.4	-645.2	-35.9
Provincial government	15.2	17.1	170.0	11.1
Management, scientific and technical services	14.8	4.9	161.4	5.0
Other professional, scientific and technical services	14.2	13.4	-98.5	-1.2
Telecommunications	11.5	7.4	-558.9	-7.9
Travel arrangement and reservation services	10.7	5.7	-90.4	-5.3
Printing	9.7	4.3	-15.5	-0.1
Auto dealers	9.7	7.2	3.0	1.6
Motion picture and video industries	7.8	8.4	393.6	2.6
Hospitals	6.4	3.9	656.8	-3.4
Special food services	6.3	9.9	86.4	4.1
Other amusement and recreation	6.0	5.9	-1,350.0	-23.5
Electrical power generation	5.8	9.9	-539.1	-6.6
Newspaper, periodical, book and database publishers	4.2	3.5	29.3	-1.4
Accounting services	3.5	4.9	-151.2	4.2
Pharmaceutical and medicine manufacturing	3.5	5.8	7.2	5.5

Source: Labour Force Survey

* Compared with the average for September 2000 to August 2001.

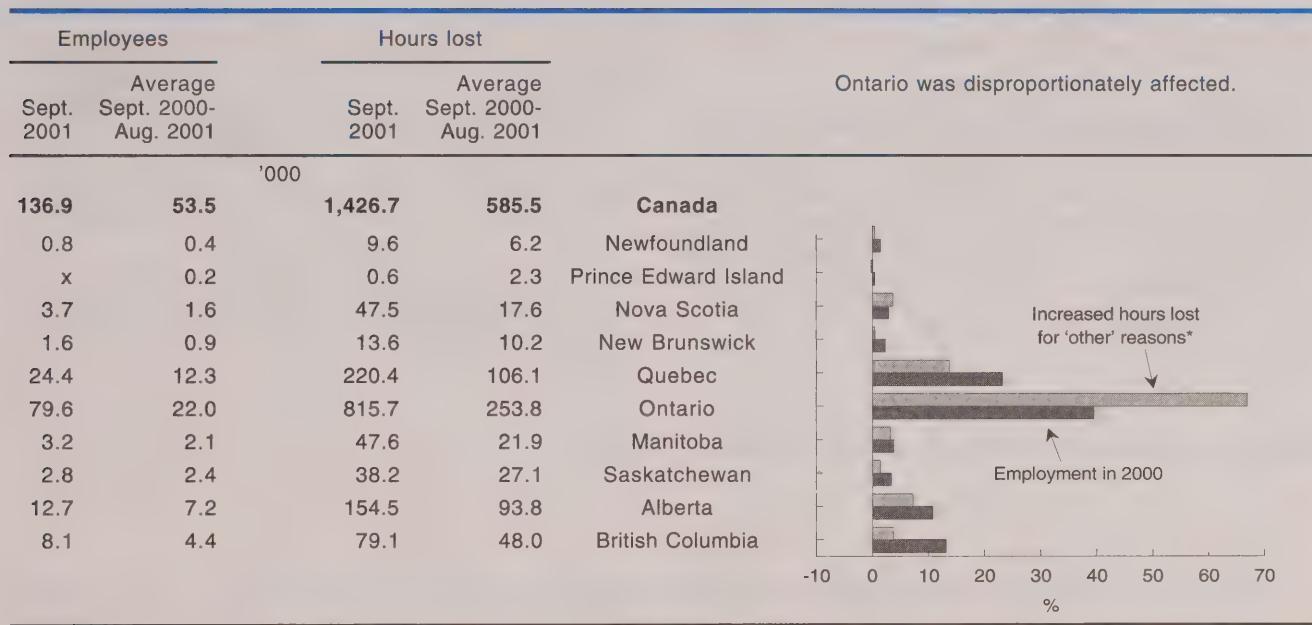
** Compared with the three-year average August to September change for 1998 to 2000.

Where were the hours lost?

About 4 in 10 employed people in Canada live in Ontario; however, two of every three hours lost were in that province, making it disproportionately affected

by the September 11 events. Given that the affected industries are concentrated in Ontario, it comes as no surprise that the province was the most affected of all the provinces.

Part-week absences for 'other' reasons



Source: Labour Force Survey

* Compared with the average for September 2000 to August 2001.

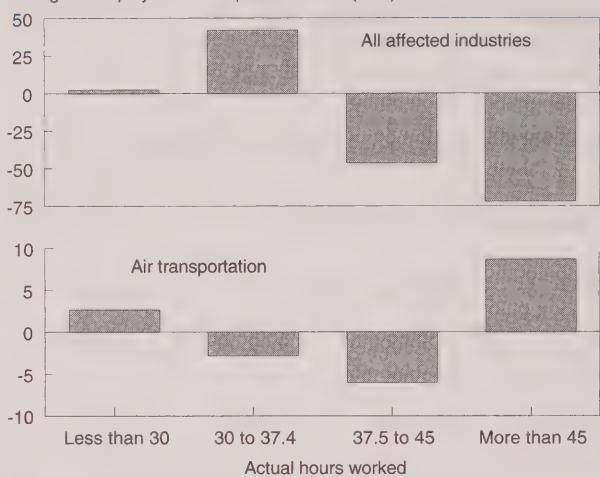
Incidence of extra hours

In some of the disaster-affected industries, more people worked longer hours, even as others lost some days of the week. The most obvious example was the air transportation industry. While there was a large drop in the number of people putting in a standard 37.5 to 40-hour workweek, more people worked longer hours and more worked shorter hours. Although this was true for air transportation and a few other industries (hospitals and auto dealers), most other industries showed more people working shorter hours and fewer people working longer hours.

In total, the extra hours worked in the disaster-affected industries did not make up for the hours lost because of absences. As well, a few disaster-affected industries (full-service restaurants and 'other' amusement and recreation), had an unusually large drop in employment. As a result, the number of actual hours worked in the disaster-affected industries fell 3.9 million hours from the normal.

Downward shift in hours worked in disaster-affected industries.

Change in employment in September 2001 ('000)*



Source: Labour Force Survey

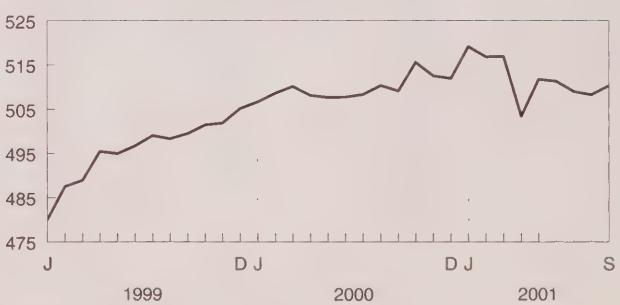
* Compared with the three-year average August to September change for 1998 to 2000.

Overall actual hours worked

Even though actual hours fell in the disaster-affected industries, other parts of the economy experienced large gains in full-time work. As a result, total actual hours worked rose 0.4%, or about 2 million.

Despite the drop in disaster-affected industries, overall actual hours worked rose in September 2001.

Actual hours worked, seasonally adjusted (millions)



Source: Labour Force Survey

After the layoff

Diane Galarneau and Lori M. Stratychuk

LABOUR TURNOVER is a major aspect of the Canadian labour market. Year after year, one-third of workers quit their job or are laid off, either permanently or temporarily. The 1990s were characterized by a general feeling of job insecurity. However, this feeling is not supported by the data. While some groups were more susceptible to layoffs and short-term employment, the average trends were fairly similar to those observed in the 1980s (Picot and Lin, 1997).

One little-studied aspect concerns the consequences of layoffs: How long does it take a permanently laid-off person to find a new job? What factors determine how long a jobless period lasts? What is the wage gap between a new job and the old one? What factors influence this gap? To answer these questions, this article uses the Survey of Labour and Income Dynamics (SLID) to examine permanent layoffs from full-time jobs between 1993 and 1998 (see *Data source and definitions*).

Who gets laid off?

From 1993 to 1998, the annual number of layoffs ranged between 411,000 and 610,000 (Table 1).¹ Since there is usually a time lag between an economic recovery and a turnaround in employment, it was not until 1995, three years after the 1992 recession, that a sizeable decrease occurred in the number of permanent layoffs (17% between 1994 and 1995). However, while permanent layoffs are sensitive to economic cycles, they are less so than temporary layoffs, quits and hirings (Picot, Lin and Pyper, 1997). In an economic downturn, employers tend to resort more frequently to temporary layoffs, attrition and reduced hiring in an effort to reduce labour costs. By the same token, in a period of growth, employers tend to call back workers laid off temporarily and hire new

employees. Also, greater numbers of dissatisfied workers are tempted to try their luck elsewhere, resulting in increased hirings and quits.

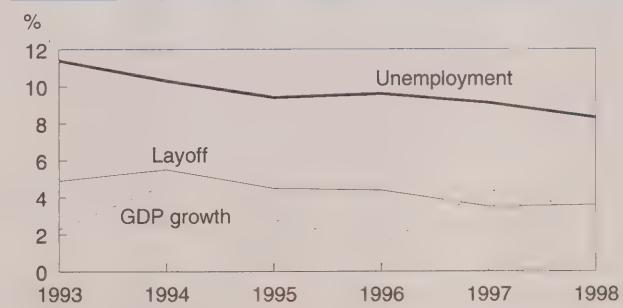
Table 1: Layoffs

	1993	1994	1995	1996	1997	1998
'000						
Layoffs	489.1	609.9	505.4	490.5	410.8	418.1
Persons laid off	470.7	555.3	430.5	465.6	365.9	363.2
%						
Layoffs per person						
1	95.7	90.7	85.2	94.9	88.3	87.3
2	3.3	7.7	11.9	4.0	10.0	9.5
3 or more	0.5	1.1	1.4	0.5	0.9	2.1

Source: Survey of Labour and Income Dynamics

The downward trend in the layoff rate, which fell from 4.9% in 1993 to 3.6% in 1998, reflects the gradual improvement in labour market conditions. From 1993 to 1998, gross domestic product expanded and the unemployment rate followed a downward trend (Chart A).

Chart A: Rates of unemployment and layoff fell as GDP grew.



Sources: Survey of Labour and Income Dynamics; Labour Force Survey; Income and Expenditure Accounts

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The layoff rate was higher for men, youths (aged 16 to 24), workers with less education, workers in the Atlantic provinces and Quebec, rural workers, people living alone, and those with no children at home (Table 2).² The rate was also higher when the spouse was earning a low income.³ Workers not subject to a collective agreement as well as those working in small firms also had relatively high rates. In general, the layoff rate was higher in construction occupations⁴ and lower for managers and professionals (Table 3). It was also higher for persons whose lost job had been short-lived and for low-wage workers. The rate of layoff declined as the hourly wage increased.

The higher layoff rates in small firms are explained by the different characteristics of their employees—the employees of large firms are generally more educated, older, more experienced, and more often unionized. Also, small firms tend to be less stable and more likely to go out of business, accounting for a sizeable proportion of permanent layoffs (Picot, Lin and Pyper, 1997).

What happens after the layoff?

The consequences of layoffs were examined using the longitudinal sample of SLID (see *Data source and definitions*). The analysis was confined to layoffs of persons with at least one year of tenure in the lost job in order to focus on the population of interest: workers with strong ties to the labour market.⁵

For certain people laid off between 1993 and 1997, the jobless period was relatively short; 13% to 21% of layoffs ended in a new job in one month or less (Table 4). For all years combined,

Table 2: Layoff rate by selected personal characteristics*

	1993	1994	1995	1996	1997	1998
'000						
Layoffs	489.1	609.9	505.4	490.5	410.8	418.1
Layoff rate	4.9	5.5	4.5	4.4	3.5	3.6
Sex						
Men	5.5	6.3	4.7	4.9	4.1	3.9
Women	3.9	4.2	4.1	3.6	2.8	3.0
Age						
16 to 24	9.3	9.8	8.5	7.0	4.5	6.4
25 to 34	4.9	5.5	4.4	4.5	3.7	3.5
35 to 44	4.3	4.0	3.6	3.8	3.4	3.3
45 to 54	4.2	6.5	3.8	4.3	3.4	3.0
55 and over	3.4	2.8	4.5	3.9	2.7	3.0
Education						
Less than high school diploma	7.4	8.4	6.5	7.0	5.9	5.7
High school diploma	4.7	4.7	5.0	5.1	4.1	3.5
Non-university certificate or diploma	5.0	5.6	4.9	4.0	3.2	3.7
University degree	2.2	4.0	1.5	1.9	1.4	1.4
Province						
Atlantic	5.3	7.3	6.3	6.6	5.0	4.9
Quebec	8.0	7.9	6.4	5.6	4.0	4.7
Ontario	3.5	4.6	2.9	3.7	3.1	2.7
Manitoba/Saskatchewan	3.4	3.1	2.7	2.6	3.2	2.7
Alberta	4.4	5.8	5.6	3.8	2.7	4.3
British Columbia	3.3	3.3	4.3	4.5	3.8	3.1
Milieu						
Urban	4.7	5.3	4.3	4.1	3.2	3.3
Rural	5.7	6.3	5.2	5.8	4.9	4.9
Family status						
Couples	4.3	4.6	4.1	3.9	3.2	2.8
Persons living alone	6.2	7.4	5.3	5.5	4.3	5.0
Children at home						
No	5.1	6.6	4.8	5.0	3.8	4.1
Yes	4.7	4.3	4.2	3.9	3.3	3.0
Preschool-aged children						
No	4.8	5.8	4.5	4.5	3.6	3.6
Yes	5.1	4.2	4.5	4.2	3.2	3.3
Visible minority						
No	5.0	5.4	4.3	4.3	3.5	3.5
Yes	--	6.2	6.2	5.6	4.3	3.5
Spouse's total annual income (for people living in couples only)						
Spouse without income	--	--	--	--	--	--
\$1 to 10,000	5.4	5.8	5.6	5.4	4.1	4.2
\$10,001 to 20,000	6.7	4.4	5.1	5.3	3.9	3.5
\$20,001 to 30,000	3.4	3.5	3.5	3.8	3.2	2.6
\$30,001 to 40,000	3.4	5.9	4.2	3.0	2.9	--
More than \$40,000	2.7	2.9	2.2	2.4	2.0	2.4

Source: Survey of Labour and Income Dynamics

* The characteristics are those of the individual at the time of the layoff. Some individuals had more than one layoff per year and their characteristics are taken into account for each layoff. Totals are based on the cross-sectional sample.

in 8% of layoffs the jobless period lasted no more than one week, with some persons finding a job even before they were laid off. The proportion of layoffs that ended in twelve months or less increased over the years, from 60% in 1993 to 83% in 1997 (Chart B).⁶ This reflects the more favourable conditions at the end of the study period and a more rapid adjustment on the part of workers. This trend of individuals finding a new job more quickly after layoff is reflected in the average jobless duration, which peaked at 18.3 weeks in 1994, and then decreased in the following years. Among those who found a job within a year, about 84% secured one that was full-time. This rate was comparable to the proportion of full-time workers in the labour force (81% according to the Labour Force Survey).⁷

One year later

One year after a layoff, almost one-fifth of the individuals were unemployed—either they had not yet found a new job or they had lost their new job. The unemployment rate for laid-off workers was 23.3%—disproportionately high compared with the total labour force, which averaged 10.0% from 1993 to 1997 (Table 5). The rate for laid-off workers varied from year to year, peaking in 1993 at 32.8% and reaching a low of 18.6% in 1996.⁸

An examination of labour force status one year after layoff shows that 83% of those who found a job within a year were still employed, whereas 9% were unemployed, and 8% were not in the labour force. This reduced the success rate after one year from 74% to 62%. The unemployment rate for those who found a job within a year (9.8%)

was therefore comparable to that of the labour force as a whole (10.0%). Among those who did not find a job, a sizeable proportion (53%) were not in the labour force and 47% were unemployed.

The unemployment rate of laid-off workers varied considerably by age, with the highest rate among those aged 55 and over (45.8%). For the labour force as a whole, the rate also showed considerable variation, but generally declined with age. The rate for the 55-and-over age group was only 7.9%.

The unemployment rate was also higher for laid-off workers with a low education level—29.1% for persons with less than a high-school diploma, compared with 20.9% for those with a post-secondary degree or higher. For the labour force as a whole, the corresponding figures were 15.8% and 7.8%. One year after their layoff, managers and professionals had the lowest unemployment rate (15.3%).

A small proportion of persons (just over 13%) returned to school after their layoff. They tended to

Table 3: Layoff rate by selected job characteristics*

	1993	1994	1995	1996	1997	1998	%
Occupation							
Managers and professionals	2.3	3.5	2.0	1.9	1.5	1.5	
Clerical	4.3	5.2	4.0	4.0	3.4	3.0	
Sales	8.1	6.0	3.6	5.4	3.0	3.8	
Service	5.2	6.2	6.0	4.2	3.9	3.3	
Primary, processing, and machining	5.4	6.4	6.3	6.5	5.2	6.2	
Product fabricating, assembling, and repairing	7.4	6.8	8.7	5.8	4.3	6.1	
Construction	10.4	12.5	8.4	10.3	8.8	6.7	
Transport equipment, material handling, and other crafts	5.0	4.6	5.0	6.3	5.8	4.8	
Subject to a collective agreement							
No	5.9	6.9	6.0	5.5	4.4	4.5	
Yes	3.5	3.3	2.4	2.8	2.1	2.0	
Duration of lost job							
1 to 4 months	22.5	26.3	20.4	15.3	12.9	9.9	
5 to 12 months	12.7	17.9	15.2	17.3	12.3	6.2	
1 to 5 years	7.2	5.9	4.9	4.8	2.9	3.5	
Over 5 years	1.4	1.4	1.4	1.4	1.3	1.4	
Hourly wage of lost job							
Less than \$7.00	9.9	10.0	11.2	9.0	9.0	6.8	
\$7.00 to 9.99	7.2	8.7	9.3	8.2	6.0	6.7	
\$10.00 to 14.99	5.4	7.0	4.9	5.3	4.3	5.1	
\$15.00 to 19.99	4.1	4.1	2.6	3.6	2.5	2.5	
\$20.00 or more	3.1	3.6	2.4	2.2	1.9	1.5	
Workplace size							
Less than 20 employees	7.7	8.5	7.3	6.0	5.6	5.0	
20 to 99 employees	5.8	6.3	4.4	5.4	4.2	4.8	
100 to 499 employees	4.2	4.2	4.0	3.7	3.1	3.4	
500 or more employees	2.6	3.5	2.5	2.6	1.8	1.9	

Source: Survey of Labour and Income Dynamics

* The characteristics are those of the individual at the time of the layoff. Some individuals had more than one layoff per year and their characteristics are taken into account for each layoff. Totals are based on the cross-sectional sample.

be younger (49% were under 35 compared with 37% for those who did not return to school), more educated (87% compared with 73% had at least completed high school—probably because they were younger), and more frequently in occupations requiring fewer skills such as clerical; service; or product fabricating, assembling and repairing. On the other hand, persons who did not return to school were more often managers and professionals. A small proportion of all laid-off persons (3%) returned to school full time.

What influences the duration of joblessness?

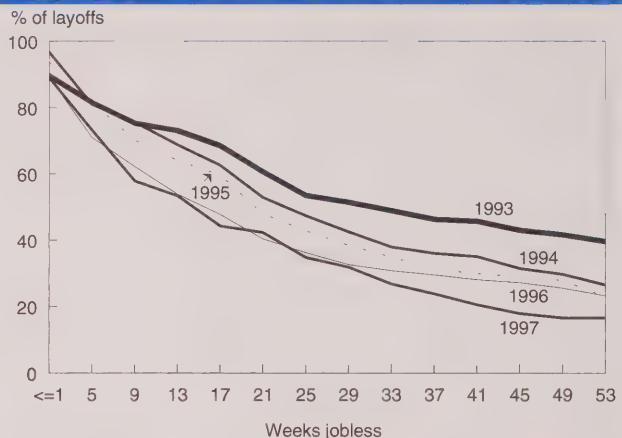
The duration of joblessness following layoff varied. A proportional hazards model was used to isolate the effect of various factors. To analyze these factors, a duration model was estimated. The duration of joblessness varied by sex, age, presence of children, presence of a spouse, occupation, receipt of unemployment insurance benefits, tenure in the lost job, visible minority status, and the year of the layoff.⁹

Personal characteristics

Being a man over 54 reduced the chance¹⁰ of finding a new job by 66% in relation to men aged 16 to 24—older workers may be perceived as being too close to retirement, or their skills may be considered outdated. Being a woman over 54 reduced the chance of finding a new job even more—by 77% in relation to men aged 16 to 24. The general pattern observed was that the chance of finding another job decreased as age increased (once again, in relation to men aged 16 to 24). However, in all age groups, the chance was always smaller for women than for men. This may be attributable to men's closer ties to the labour market.

Living alone or having no children—two factors likely to increase mobility—tended to increase the chances of finding a new job by 30% and 24% respectively. The spouse's income level had no effect.

Chart B: Weeks of joblessness declined as the economy improved.



Source: Survey of Labour and Income Dynamics

Occupation and length of service

In comparison with the reference category—managers and professionals—most occupations associated with a lost job had little influence on the duration of joblessness. The exceptions were clerical, sales and service, where the chance of finding a new job at any time after layoff was 32% lower than for

Table 4: Success rate by length of jobless period

	1993	1994	1995	1996	1997	1993-97
	'000					
Total layoffs*	203.0	217.8	220.4	203.1	177.0	1,021.3
Found a job within						%
1 month or less	16	13	14	21	21	17
3 months or less	27	31	36	46	47	37
6 months or less	46	55	58	64	66	58
9 months or less	54	64	69	70	77	67
12 months or less	60	73	77	77	83	74
Proportion with full-time work among those finding a job within a year	85	84	87	81	82	84
Average length of jobless period	16.7	18.3	17.6	13.4	14.5	16.1

Source: Survey of Labour and Income Dynamics

Note: Since persons laid off in 1998 could not be observed for a full year (this would have biased their job search success rate), they were excluded.

* From jobs with at least one year of tenure.

Table 5: Status, after one year, of workers laid off permanently from a full-time job, 1993 to 1997

	Total '000	Employed	Unemployed	Unemployment rate*		Not in the labour force†
				Laid-off workers	Total labour force**	
				%		
Total	1,021.3	61.8	18.8	23.3	10.0	19.4
Year of layoff						
1993	203.0	50.7	24.8	32.8	11.4	24.5
1994	217.8	64.4	18.0	21.8	10.4	17.6
1995	220.4	63.4	18.5	22.6	9.4	18.1
1996	203.1	64.9	14.8	18.6	9.6	20.3
1997	177.0	66.1	17.9	21.3	9.1	16.0
Success in finding a job						
Found a job within a year	755.6	83.4	9.1	9.8	...	7.5
Did not find a job within a year	264.2	...	46.7	...	...	53.3
Sex						
Men	654.2	64.6	18.8	22.5	10.4	16.6
Women	367.2	57.0	18.8	24.8	9.5	24.2
Age						
16 to 24	103.8	73.0	--	--	15.8	--
25 to 34	292.0	62.9	19.9	24.1	10.4	17.2
35 to 44	272.8	62.9	18.8	23.0	8.5	18.3
45 to 54	256.6	66.5	16.2	19.6	7.4	17.4
55 and over	96.1	31.4	26.5	45.8	7.9	42.1
Education						
Less than high school diploma	234.3	55.9	23.0	29.1	15.8	21.1
High school diploma	312.7	60.3	17.8	22.7	9.9	21.9
Postsecondary or higher	455.4	67.1	17.7	20.9	7.8	15.2
Occupation						
Managerial and professional	251.7	74.3	13.4	15.3	3.8	12.3
Clerical, sales and service	367.5	51.6	21.9	29.8	6.8	26.5
Primary, processing, machining, product fabricating, assembling and repairing	252.2	63.6	18.3	22.3	8.4	18.2
Construction	59.3	62.7	21.4	25.4	15.5	15.9
Transport equipment, material handling and other crafts	87.4	62.4	21.7	25.8	8.6	15.9
Other studies						
Picot and Pyper (1988)††	831.8	64.4	13.8	17.6	8.2	21.8
Picot and Wannell (1982-1985)	999.0	62.9	20.9	24.9	11.2	16.2

Sources: Survey of Labour and Income Dynamics; Labour Force Survey

* Rate refers to jobs for laid-off workers, but to individuals for total labour force. See note 7 for more explanation.

** Age 15 and over.

† Includes persons who did not specify their status.

†† All displaced workers, without restriction as to job tenure.

managers and professionals. Various explanations are possible. Clerks, salespersons and service workers may have a lower degree of skill transferability compared with managers and professionals. This could make their skills seem less valuable to potential employers and reduce their chances of getting a job. This lower transferability could also reflect a lower versatility. Less

versatile workers have a smaller range of skills, which can reduce job opportunity. Also, clerks, salespersons and service workers appeared to have weaker ties to the labour force—20% were out of the labour force one year after layoff compared to 6% of managers and professionals. This weaker tie may reflect a lower job-search intensity.

Data source and definitions

The Survey of Labour and Income Dynamics (SLID) is a longitudinal survey that was launched in 1993; it also provides cross-sectional estimates. The first part of the article is based on the cross-sectional sample of SLID, and examines the number and rate of layoffs for each year. The second part of the article uses the longitudinal sample, and focuses on what happens after a permanent layoff. Estimates from the cross-sectional sample are weighted in order to be representative of the Canadian population (excluding individuals under 16 and those living in the Territories, Indian reserves, military bases, or in institutions) for each year. On the other hand, the longitudinal sample is representative of the population at December 1992. From 1993 to 1995, the longitudinal sample of SLID was based on a single panel, consisting of 15,000 households representing approximately 30,000 persons. With the 1996 introduction of a second panel, SLID now covers 30,000 households (60,000 persons).

Longitudinal sample

All estimates concerning the length of the jobless period are based on the longitudinal sample from SLID. Only persons who were laid off at least once between January 1993 and December 1998 and who answered the SLID questionnaire in all six years were selected. The sample population represents the population as of December 31, 1992. The unit of analysis is the layoff (and not the person); all layoffs experienced by a given person are counted separately.

The probability of finding a job at any time after layoff was estimated using the Cox proportional hazards model, which takes account of censored values. For example, if a person laid off in 1998 had not found a job by the end of the year, the associated information could be incorporated into the model, as could information relating to persons who had not found a job more than one year after layoff.

The model for the wage gap was estimated only for those individuals who found a job within a year. This model was estimated by ordinary least squares.

Greater tenure in the lost job reduced the probability of finding a new job by 15%. It could be that workers who stay in a job longer tend to have skills specific to their employer, and these may sometimes be hard to transfer. In addition, such individuals may be unfamiliar with job-searching and could take longer to find a new job.

Employment Insurance benefits

The receipt of Employment Insurance (EI) benefits reduced the chances of finding a job by 38%. EI benefits may be associated either with a job search that is initially less intense or with an extended search in hopes of finding more suitable work. EI benefits had a major effect on the length of the jobless period.

Layoffs

The layoffs covered by this study are those that occurred for structural or cyclical reasons—the company moved, the company went out of business, a business slowdown occurred, or the employee was dismissed.

Since a person who is laid off must first have been an employee, the self-employed were excluded, as were full-time students who simultaneously held a full-time job or attended an educational institution for at least eight months during the year. Layoffs from a temporary or seasonal job were also excluded, since workers in such jobs expect them to end after a specified period. Likewise, layoffs of persons with more than one job for more than one week were excluded, the reasoning being that if such people were laid off from one of their jobs, they would not feel the same urgency to replace it. However, a transition period was permitted to allow for people who found a new job the week before or after being laid off.

Only permanent layoffs from a full-time job were counted in order to observe the behaviour of workers with strong ties to the labour market. Whether a layoff is permanent or temporary depends upon the perception of the respondent.

People were counted more than once if they had more than one layoff. This provides a more complete picture of the characteristics of the jobs in which layoffs occurred—by industry, occupation, union status, wage level, or length of employment. This is not a double count since the layoffs took place at different times. People's characteristics may also have changed in the interim: they will have aged, their education level may have increased, or their experience may have become more diversified. However, most persons were laid off only once in the six years covered by this study.

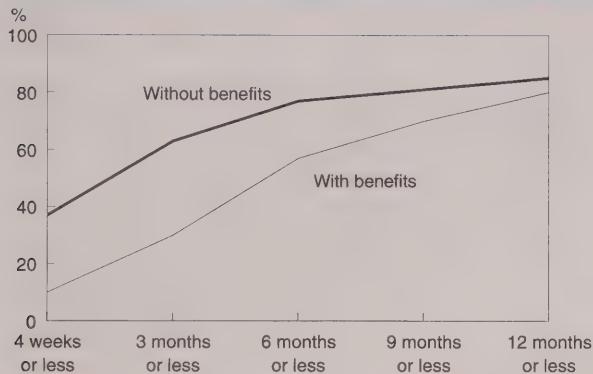
The layoff rate is the ratio of permanent layoffs from full-time jobs to total full-time jobs held for one year, excluding self-employed persons and full-time students. This rate was compiled for each year.

Among persons not receiving benefits, nearly two-thirds found a job in three months or less, compared with 30% of those with benefits. Since EI benefits are of limited duration, their effect declines over time, with the result that a comparable proportion of claimants and non-claimants found a job in twelve months or less (Chart C).

Visible minorities

Being a member of a visible minority reduced the chances of finding a new job.¹¹ A number of these persons were immigrants who had come to Canada fairly recently (nearly a third after 1985). Many of them may have been in the process of integrating into the Canadian labour market or in training (in language

Chart C: EI beneficiaries took longer to find a new job.



Source: Survey of Labour and Income Dynamics

courses or courses taken to gain recognition of their degrees). At first, some may have accepted jobs not compatible with their qualifications, and then later searched for a more suitable job.

Year of layoff

Some years were more conducive to a successful job search than others—for example, 1995 to 1997 compared with 1993. The years 1995 to 1997 had lower unemployment rates and were characterized by robust economic growth (Chart A). Some of the years in the study period also coincided with the reform of the Employment Insurance program. The improvement observed toward the end of the study period could be partly attributable to this reform. Starting in 1996, the eligibility rules were tightened, the entitlement period was reduced,¹² and the way of calculating benefits was changed. These changes may have induced some laid-off persons to intensify their job search.

Other characteristics such as education level, earnings in the lost job, and the month of the layoff did not have any significant effect on the probability of finding a new job.

Wages before and after layoff

In the job following layoff, 21% of workers received a wage that was equal (plus or minus 5%) to the wage in the lost job, while 47% received a lower wage and 32% received a higher wage (Table 6). Regardless of the year of the layoff, more people experienced a wage loss in the new job. For those experiencing a loss, the

average loss was nearly 30%; for those experiencing a gain the average increase was just under 26%. In all, 21% of layoffs were followed by wage losses of more than 30%, while only 14% were followed by gains of more than 30%.

Estimates show that the wage gap was sensitive to the wage in the lost job.¹³ Persons with a higher wage were more likely to suffer a loss; those in low-paying jobs had a better chance of a wage gain in their new job (Chart D). This effect was observed earlier (Picot and Wannell, 1987; Picot and Pyper, 1993). According to Picot and Pyper, “Wage change may also be negatively correlated with the wage level in the lost job simply because the higher the wage, the less likely is a very large wage gain. There is a limit to the wages most firms are willing to pay (for a given level of human capital). Similarly, for very low wage jobs large wage losses are unlikely because there is a minimum wage restriction. These considerations may lead to a regression to the mean phenomenon.”

The characteristics of the new job also affected the wage gap; for example, if the job was full-time,¹⁴ unionized, or if the occupation was the same as in the lost job, the wage in the new job tended to be higher. The skill level associated with the occupation also affected the wage gap. Managers and professionals as well as construction workers were more likely to report a wage gain in the new job (in comparison with the reference category *other occupations*: transport equipment operators, material handlers, and other crafts). However, the wage gap showed no relationship to the length of the jobless period or the worker’s education level.¹⁵ Furthermore, family characteristics such as having children or having a spouse with no income had no more effect on the wage gap than did the year of the layoff.

Summary

This study examined what happens after a person is laid off from a full-time job. The layoff rate was higher for men, youths (aged 16 to 24), workers with less education, construction workers, workers not covered by a collective agreement, and workers in small firms. The rate was also higher for individuals whose lost job was short-term and for low-wage workers. Persons living alone and those with no children at home also had a relatively high layoff rate. Conversely, the layoff rate was low for managers and professionals.

Table 6: Earnings change for persons finding a new job within a year, 1993 to 1997

	%
Loss	47
More than 30% less	21
21 to 30% less	7
11 to 20% less	11
5 to 10% less	7
Average loss	-29.8
Same (+/-5%)	21
Gain	32
More than 30% more	14
21 to 30% more	4
11 to 20% more	8
5 to 10% more	6
Average gain	25.6
Overall change	0.52

Source: Survey of Labour and Income Dynamics

For some people, the jobless period was relatively short—for 8%, one week or less. The proportion of layoffs that ended in a job (within a year) averaged 74%. The

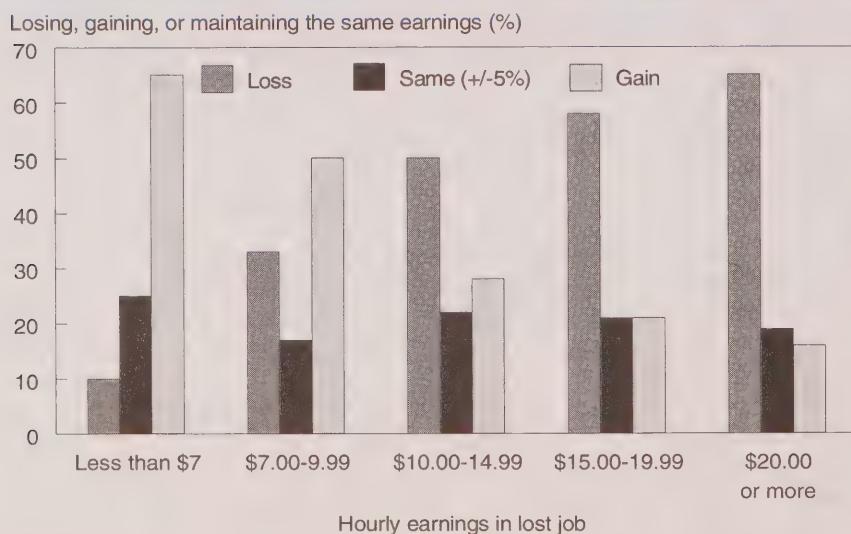
proportion increased over the years, from 60% in 1993 to 83% in 1997. This reflects the more favourable economic conditions at the end of the study period and a more rapid adjustment on the part of workers. Nonetheless, one year after a layoff some of those who had found a new job also lost it. Accordingly, the job search success rate declined to 62%.

One year after a layoff, almost one in five laid-off workers were unemployed—they had not yet found a job, or they had lost their new job. Laid-off persons therefore had disproportionately high unemployment rates—over 23% one year later—compared with the labour force as a whole, for which the rate averaged 10% between 1993 and 1997. The unemployment rate of laid-off workers varied according to the year, peaking at 32.8% in 1993 and reaching a low of 18.6% in 1996.

The chance of finding a job—regardless of the number of weeks after layoff—was lower for persons aged 55 and over; women; persons working as clerks, salespersons or in service occupations; Employment Insurance claimants; members of visible minorities; and persons who had worked for a long time for one employer. Having no children at home, living alone, working as a manager or professional, or being laid off between 1995 and 1997 tended to increase the chance of finding a new job. Neither education level nor wage level of the lost job had any significant effect.

Regardless of the year of layoff, more people suffered a wage loss in their new job. Average wage gains and losses were relatively high—26% and 30% respectively. A major factor determining the size of the wage gap was the wage in the lost job. The higher the wage in the lost job, the more frequent the loss in the new job; conversely, the lower the wage in the lost job, the more frequent the gain in the new job. The wage gap also depended on the characteristics of the new job. For example, if the new job was full-time or unionized, or if the occupation was the same as for the lost job, the wage tended to be higher than for the lost job. The skill level associated with an occupation also affected the wage gap—managers and professionals as well as construction workers had a better chance of a gain in their new job.

Chart D: The higher the previous earnings, the greater the chance of lower earnings in the new job.



Source: Survey of Labour and Income Dynamics

Perspectives

■ Notes

- 1 This part of the study is based on the cross-sectional sample.
- 2 The characteristics of laid-off persons are as of December 31 of the year of the layoff.
- 3 Earlier studies noted similar trends (Picot and Wannell, 1987; Picot and Pyper, 1993; Picot and Lin, 1997). It would appear that the last in are also the first out. Various theories on labour turnover explain this phenomenon, such as those based on human capital concepts (Parsons, 1972) or job matching (Jovanovic, 1979). According to Parsons' theory, the employee acquires experience and the employer invests in the employee so that, over time, the probabilities of a quit or dismissal diminish. In job matching described by Jovanovic, at the outset the employee and the employer have limited knowledge of each other. Over time, the employer-employee match is more solid, thereby reducing the probability of a quit or dismissal.
- 4 This was found despite the exclusion of seasonal and temporary workers. While construction workers are often laid off temporarily, these results suggest that permanent layoffs are also sizeable for this occupation. However, it is possible that a certain number of seasonal workers were inadvertently included in the survey universe.
- 5 Persons with only a few months of job tenure might have a profile similar to that of sporadic workers. A sizeable proportion of layoffs occurred in short-term jobs; in fact, nearly a third of laid-off persons had been in jobs that lasted less than four months. Confining the analysis to layoffs of jobs lasting more than one year meant that 56% of layoffs were excluded. With this restriction, a larger proportion of laid-off persons (97%) had only one layoff between 1993 and 1998. For all layoffs, the corresponding proportion averaged 91%.
- 6 The overall success rate—that is, where no time restriction was imposed—was obviously higher. It ranged between 85% and 89%. However, this success rate was influenced by the year of the layoff—people laid off in 1993 had five years to find a job, whereas those laid off in 1997 had only one year. So that the average duration of joblessness would not be influenced by the year of the layoff, the rate was calculated only for persons who found a new job within a year. The year 1998 was therefore excluded from these calculations; however, it was included in the duration model.
- 7 In the Labour Force Survey, the proportion (81%) refers to the number of *individuals* while in SLID the proportion is based on the number of *jobs*. However, since 97% of all individuals had only one layoff, the results may be compared.

8 According to Picot and Wannell (1987), the post-layoff unemployment rate for the period from 1982 to 1985 was 24.9%. However, that period differs from the study period in that it began with a recession and ended with an expansion, whereas the period from 1993 to 1997 fell within the economic upswing that followed the 1992 recession. It is therefore difficult to compare unemployment rates for the two periods. Also, the rate obtained by Picot and Wannell was the one at the time of the survey in January 1986; this was not necessarily the rate one year after the layoff, since the layoffs occurred between 1981 and 1984. The unemployment rate for workers laid off from a full-time job in 1988 (without restriction as to the number of months or years of tenure in the lost job) was 17.6%, slightly lower than the rate for 1996 (Picot and Pyper, 1993). The years 1988 and 1996 differed as to the unemployment rate (7.8% and 9.6% respectively) and GDP growth rate (4.9% and 1.5%). However, both years fell during phases of expanding GDP and declining unemployment. The study by Picot and Wannell focused on layoffs from full-time jobs, without restriction as to the length of employment. This differs from the definition used in the present study, which deals with layoffs from a full-time job held for at least one year.

9 The model on the duration of the jobless period included the following variables: sex, age, province of residence, education level and family status (presence of children, presence of a spouse and spouse's income where applicable) of the laid-off person; characteristics of the lost job (occupation, hourly wage and length of employment); receipt of Employment Insurance benefits; and some characteristics of the layoff, such as the year or month in which it occurred. Other variables were also tested (such as the union status of the lost job, or living in a rural or urban area). None of these yielded conclusive results. Furthermore, since not all provinces were in the same phase of the economic cycle, a variable combining the effect of the year and the province was also tested without any significant results. The detailed results are shown in the appendix.

10 The technically correct term for a proportional hazards model is *risk*. To avoid the negative connotation of this word, the more common term *chance* is used. See analysis by Allison (1995).

11 Only 8% of jobs from which people were laid off were held by members of a visible minority; therefore, caution should be exercised in drawing any conclusions.

12 Before June 30, 1996, claimants could receive benefits for up to 50 weeks, depending on the unemployment rate in their region and how long they had been employed. The new legislation reduced the entitlement period to 45 weeks. Since in this study persons laid off had to have at least one year of

tenure in the lost job, they qualified for the maximum number of weeks of benefits, based on the unemployment rate in their region.

13 Models of the wage gap commonly use the logarithm of the ratio of the new wage to the old wage. This approach was used here. Detailed results are available from the authors.

14 This relationship was unexpected, since the layoffs studied were restricted at the outset to persons with a full-time job.

15 In the study by Picot and Pyper (1993), the wage gap exhibited the same relationship with the change-of-occupation variable and with the length of the job search. Unlike the results of the present study, the wage gap was affected by education level.

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Appendix: Duration model, proportional hazard results

Difference in risk compared with reference category (risk ratio - 1)

%		
Age and sex		
Men		
16 to 24 [†]	0	
25 to 34	14	
35 to 44	-11	
45 to 54	-9	
55 and over	-66*	
Women		
16 to 24	13	
25 to 34	-27	
35 to 44	-28	
45 to 54	-16	
55 and over	-77*	
Education		
Less than high school diploma	-15	
High school diploma [†]	0	
Postsecondary or more	-2	
Visible minority		
No	40*	
Yes	0	
Children at home		
No	24*	
Yes	0	
Spousal income		
No spouse	30**	
Spouse without income	1	
\$1 to 10,000	9	
\$10,001 to 20,000	-12	
\$20,001 to 40,000	-11	
More than \$40,000 [†]	0	
Province		
Atlantic	-11	
Quebec	-14	
Ontario [†]	0	
Manitoba/Saskatchewan	25	
Alberta	6	
British Columbia	17	
Occupation in lost job		
Primary, processing and machining	-24	
Construction	-23	
Clerical, sales and service	-32*	
Professional and managerial [†]	0	
Product fabricating, assembling, repairing	-17	
Transport equipment, material handling and other crafts	-10	
Hourly earnings in lost job		
Less than \$7.00	14	
\$7.00 to 9.99 [†]	0	
\$10.00 to 14.99	0	
\$15.00 or more	1	
Month of layoff		
January	-11	
February	-2	
March [†]	0	
April	-21	
May	23	
June	-13	
July	-6	
August	24	
September	2	
October	4	
November	9	
December	22	
Year of layoff		
1993 [†]	0	
1994	21	
1995	31*	
1996	51*	
1997	87*	
1998	-20	
EI benefits		
Not	0	
Yes	-38*	

[†] Reference category.

* Significant at 5% level.

** Significant at 10% level.

Evolution of the Canadian workplace: work from home

Ernest B. Akyeampong and Richard Nadwodny

AS CANADA EVOLVED FROM a rural and resource-based economy into an urban and industrialized one, residences became largely distinct from workplaces. Throughout the 1900s, increased access to cars, improved transportation infrastructure, and growth of public-transit systems combined to change the face of Canadian towns and cities, and further increased the distance between home and work for many. However, in the past decade or two, the trend appears to be reversing somewhat. Technological advances, notably in the information area (for example, computers and the Internet), have made it possible for workers in many industries to work from their homes, or even while travelling. There is a general belief that downsizing, restructuring, and contracting-out practices by corporations and governments, especially in the past decade, may also have pushed some employees into home-based self-employment¹, but that perception is not supported by empirical findings in a recent study (Lin, Yates and Picot, 1999).²

Using various surveys, this study examines the number of Canadians usually working from home over the past three decades. It discusses the advantages and disadvantages of this arrangement. It profiles who these workers are, what kind of work they do, the volume of work they perform, and how they accomplish it—especially their use of computers. It also looks at job quality.

Size of the work-from-home workforce

Estimates of the number of people working at home date back to the 1971 Census. Since then, the Survey of Work Arrangements (SWA), the Survey of Labour and Income Dynamics, the General Social Survey (GSS), and the Workplace and Employee Survey have

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all collected similar data. However, these surveys differ in their questions, reference periods, and designs (and indeed for some surveys, the questions were different in different years). As a result, no consistent time series exists on home-based workers, making it impossible to be precise on trends over the past three decades.

Nevertheless, similarities in question wording among some surveys permit the construction of two “mini-series” on trends. The censuses of 1971, 1981 and 1991 are fairly comparable, as are the SWA (1991 and 1995) and the GSS 2000. Compared with the SWA and the GSS, the census definition of a home-based worker is more restrictive, implying lower home-based numbers in the census series (see *Data sources, questions and estimates*).

According to the census, the number of home-based workers (employees plus self-employed) rose from 613,000 to 1,079,000 between 1971 and 1991. However, the increase was in line with that of the overall workforce, so the proportion of persons working at home remained virtually unchanged at around 8%. Both employees and the self-employed saw their home-based numbers increase (from 196,000 to 461,000 for employees and from 417,000 to 618,000 for the self-employed), but the share of home-based employees remained virtually unchanged at around 4% of all employees, while the share of the work-from-home self-employed rose from 39% to 43% of the total self-employed.

The year 1991 presents a classic example of the effects of questionnaire word changes and seasonality on survey results. That year, the census (conducted in June) counted 461,000 home-based employees, while the SWA (conducted in November) estimated 617,000—almost one-third more than the census. (The 1991 SWA did not cover the self-employed.) While some of the difference can undoubtedly be attributed to seasonality, some was due to differences in questionnaire wording: The less restrictive SWA definition contributed to the larger SWA count.³

Data sources, questions and estimates

	Home-based workers		
	Total	Employees	Self-employed
'000 / (% of workforce)			
Census of Population			
1971 Where do you usually work?	613 (8)	196 (3)	417 (39)
1981 At what address did you (usually) work?	773 (7)	298 (3)	474 (41)
1991 At what address did this person usually work?	1,079 (8)	461 (4)	618 (43)
Survey of Work Arrangements			
1991 Excluding overtime, does ... usually work any of his/her scheduled hours at home? (employees only)	... 617 (6)	...	...
1995 Excluding overtime, does ... usually do any of his/her work at home? (employees)	2,129 (16)	1,003 (9)	1,126 (53)
Does ... operate his/her business from home? (self-employed)			
General Social Survey			
2000 Excluding overtime, do you usually work any of your scheduled hours at home?	2,795 (17)	1,426 (10)	1,369 (50)

The 1995 SWA and 2000 GSS estimates also show that the number of people doing some or all of their work at home rose from 2,129,000 in 1995 to 2,795,000 in 2000, but their share of total employment remained virtually unchanged around 16% to 17%. Both home-based employees and self-employed saw their numbers rise over the period—from 1,003,000 to 1,426,000 for employees, and from 1,126,000 to 1,369,000 for the self-employed. However, because growth in home-based work was matched by a proportionately equal growth in other work, the percentages of home-based employees and self-employed hardly changed over the period (around 9% to 10% for employees and ranging from 50% to 53% for the self-employed).

Results from the censuses, SWA and GSS also suggest that a large majority of home-based workers put in only a few hours of work at home each week.

Pros and cons of working at home

Working at home has both advantages and disadvantages. For the employee, it permits increased flexibility in scheduling activities; makes it easier to balance work and personal or family demands; reduces expenses for transportation, clothing and food; and cuts commuting time. On the negative side, working at home may reduce one's social circle, stifle career advancement, or even increase the workload.

For the employer, a work-from-home arrangement may increase employee productivity, reduce expenses for work space, improve recruitment and retention of employees, and reduce absenteeism.⁴ Among the most commonly cited disadvantages are problems related to co-ordination and communication, lack of control over quality of work, and problems associated with information security.

Many of the pros and cons listed above for employees also apply to self-employed workers. Additional advantages include possible cost-savings resulting from operating a business at home instead of at an outside premise, as well as access to certain tax write-offs.⁵

Society in general can also benefit through reductions in road congestion (and possibly reduced accidents and their associated costs). Air pollution and greenhouse gas emissions would also be less. On the negative side, home-based businesses may contribute to increased noise, traffic and pollution in some residential neighbourhoods.

Who works at home

According to the GSS, 2.8 million people worked at home in 2000, (Table 1). Although this number was equally split between employees and the self-employed (1.4 million each), the former represented only 10% of all employees while the latter accounted for 50% of their group. Employees and the self-employed are profiled separately because the decision for an employee to work at home is generally made jointly by the employer and the employee, unlike the self-employed.

Table 1: Persons working from home by selected characteristics, 2000

	Employees			Self-employed		
	Total	Work from home		Total	Work from home	
		Total	Incidence		Total	Incidence
		'000	%		'000	%
Both sexes	13,932	1,426	10.2	2,750	1,369	49.8
Male	7,359	782	10.6	1,784	826	46.3
Female	6,572	644	9.8	965	544	56.3
Age						
15-24	2,991	137	4.6	141	60	42.3
25-54	9,782	1,174	12.0	2,078	1,046	50.4
55 +	1,159	114	9.8	531	263	49.6
Work status						
Full-time	5,845	747	12.8	1,358	727	53.6
Part-time	960	128	13.4	312	166	53.1
Education						
Less than high school diploma	2,216	86	3.9	435	166	38.2
High school diploma	2,659	147	5.5	475	202	42.6
Some postsecondary	2,379	189	8.0	384	204	52.9
Community college certificate	3,717	347	9.3	688	368	53.5
University degree	2,883	655	22.7	753	426	56.6
Marital status						
Married	8,316	1,009	12.1	2,084	1,065	51.1
Separated, divorced, widowed	1,008	99	9.9	213	119	56.1
Single	4,332	304	7.0	395	159	40.2
Age of youngest child						
With children	5,393	700	13.0	1,330	690	51.9
Pre-school age	1,350	199	14.8	279	141	50.5
5-12 years	1,935	259	13.4	482	268	55.7
13 years and over	2,109	241	11.4	569	281	49.3
Without children	411	47	11.5	49	24	49.5

Source: General Social Survey

Among employees, the incidence of home-based work is marginally higher for men (10.6%) than for women (9.8%). Core-age workers (25-54 year-olds) are the most likely to work at home (12.0%), and youths (15-24) the least likely (4.6%). The practice was almost equally as prevalent among full-time and part-time workers. Married employees were more likely to work from home than

their single (never married) counterparts (12.1% versus 7.0%). Part of the difference reflects an age effect. The practice was more prevalent among employees with young children, especially preschool aged (14.8%), than among employees without children (11.5%).

The likelihood of an employee usually doing some or all of their work at home rises with edu-

tional attainment. This is mainly because the occupations most conducive to this arrangement tend to have higher concentrations of highly educated workers, and vice versa. Among employees with university degrees, about 23% usually did some or all their work from home, compared with only 4% among those without a high-school diploma.

Among self-employed workers, the incidence of work from home was around 50% for most of the demographic groups selected. Notable exceptions were lower-than-average incidences among young entrepreneurs (42.3%), entrepreneurs with the least education (38.2%), and the never-married group (40.2%). As well, higher-than-average incidences (over 56%) were found among entrepreneurs with university degrees and the separated, divorced or widowed.

What and how much is done at home

Work from home varies by occupation and industry (Table 2). In a profit-maximization market economy, an employer would allow such an arrangement based on factors such as operational feasibility, effects on the morale and productivity of co-workers, and union demands. Operational feasibility rests partly on whether links with co-workers require an employee to be present on the employer site, and on whether the equipment used at work is available at, or portable to, home. An auto-assembly worker, for example, has to work at the employer's work site; a social science researcher, on the other hand, can more easily work from home.

Table 2: Persons working from home by industry, occupation and province, 2000

	Employees			Self-employed		
	Total	Work from home		Total	Work from home	
		Total	Incidence		Total	Incidence
		'000	%		'000	%
Industry	13,932	1,426	10.2	2,750	1,369	49.8
Agriculture	151	--	--	255	166	65.2
Forestry, fishing, mining, oil and gas	289	28	9.6	75	27	35.5
Utilities	108	--	--	--	--	--
Construction	630	44	7.0	273	114	41.6
Manufacturing	2,200	164	7.4	146	70	48.4
Trade	2,095	149	7.1	325	141	43.2
Transportation and warehousing	610	50	8.3	155	36	23.0
Finance, insurance, real estate and leasing	762	107	14.0	168	105	62.3
Professional, scientific and technical	676	155	22.9	355	244	68.7
Management, and administrative and other support	394	44	11.1	182	68	37.4
Educational services	1,035	242	23.4	61	33	53.7
Health care and social assistance	1,236	107	8.6	200	127	63.6
Information, culture and recreation	700	90	12.9	135	87	65.0
Accommodation and food services	1,018	36	3.6	96	35	36.1
Other services	477	62	12.9	218	77	35.1
Public administration	906	95	10.5	16	--	--
Occupation						
Management	902	229	25.4	508	222	43.6
Business, finance and administrative	2,580	301	11.7	295	191	64.7
Natural sciences	949	175	18.4	154	99	64.5
Health	619	28	4.5	103	40	39.2
Social science, education	1,023	271	26.5	108	76	70.0
Artistic, culture, recreation and sport	312	52	16.5	203	134	65.9
Sales	3,615	220	6.1	503	246	48.8
Trades, transport and equipment	1,830	74	4.0	369	110	29.8
Occupations unique to primary industry	377	20	5.4	334	182	54.5
Occupations unique to processing and manufacturing	1,199	35	2.9	80	32	39.4
Province						
Newfoundland	243	21	8.6	33	15	46.1
Prince Edward Island	69	--	--	--	--	--
Nova Scotia	446	43	9.5	57	27	46.7
New Brunswick	355	27	7.6	57	20	35.8
Quebec	3,400	354	10.4	664	305	45.9
Ontario	5,465	552	10.1	976	497	51.0
Manitoba	524	49	9.4	101	56	55.1
Saskatchewan	415	38	9.2	116	61	52.3
Alberta	1,403	142	10.2	342	174	50.8
British Columbia	1,611	193	12.0	394	210	53.3

Source: General Social Survey

With these factors in mind, the lowest incidences of home-based work were found among workers in occupations unique to processing and manufacturing (2.9%); trades, transport and equipment-operating (4.0%); and health (4.5%) occupations. In contrast, the highest incidences were found among employees in managerial positions (25.4%) and in social-science and education professions (26.5%).

The picture by industry largely mirrored that by occupation. The practice of working from home was least common among employees in accommodation and food services (3.6%), construction (7.0%), trade (7.1%) and manufacturing (7.4%). Higher incidences were observed among employees in educational services (23.4%) and the professional, scientific and technical industry (22.9%).

The incidence of work from home among the self-employed by occupation and industry was generally similar to that found among employees, except that for each occupation and industry, the practice was much more common among the self-employed.

Incidence also varied by province. These variations reflect in part differences in provincial industry and occupational mixes. The practice was most common in British Columbia (12.0%) and least common in New Brunswick (7.6%). For self-employed workers, those living in Manitoba (55.1%) were most likely to work from home. Those in New Brunswick were the least likely (35.8%) to do so.

As stated earlier, most employees working at home do so for only a few hours each week.⁶ In 2000, about 65% of such employees worked between one and 10 hours each week at home. Less than 3% put in more than 40 hours. About 33% of the work-from-home self-employed put in between one and 10 hours of work at home each week, and 17% of them reported more than 40 hours.

Use of computers and information technology

Advances in information technology are generally believed to be among the driving forces behind the growth in home-based work for both employees and the self-employed, especially in the past decade or two. Notably, innovations to telephone systems and the advent of e-mail and the Internet have made it easier to keep in touch with co-workers and clients from practically anywhere. But what evidence exists to support this contention?

Without assigning causality, the GSS shows that the advent of computer and automated technology affected the work of home-based workers more than that of their non-home-based counterparts, and that home-based workers used these new technologies much more. This applied both to employees and the self-employed (Table 3).

Among employees, about 77% of home-based workers compared with 54% of their non-home-based counterparts felt that their work had been greatly or somewhat affected by the computer or automated technology in the past five years. Furthermore, about 83% of home-based employees compared with 51% of their non-home-based counterparts reported using a computer in their main job in the past 12 months.

The frequency of use of computers and other automated technology was also greater among home-based employees. The proportions using the telephone or e-mail every day or several times a week for work-related purposes were 58% and 48% respectively; for their non-home based counterparts, the corresponding proportions were less than half—26% and 19%.

As well, a higher proportion of home-based employees (49%) felt their work had become more interesting as a result of computers, compared to 30% for non-home-based employees.

Job quality

Job quality for home-based and non-home-based employees can be measured in several ways. Data

Table 3: Use of computers or automated technology, 2000

	Employees		Self-employed	
	Work at home	Work at employer's premise	Work at home	Work outside home
%				
Used a computer in main job in past 12 months	83.3	51.3	60.4	40.7
Work has been greatly or somewhat affected by computers or automated technology in last 5 years	76.5	53.7	60.8	47.4
Work has become more interesting as a result of computers in last 5 years	49.1	29.7	37.2	27.3
Used the Internet every day or several times a week at home last month	51.8	29.2	45.2	27.6
Used the telephone every day or several times a week for work or business related purposes	57.7	26.5	39.6	25.5
Used e-mail every day or several times a week for work or business related purposes	47.8	19.5	26.7	16.1

Source: General Social Survey

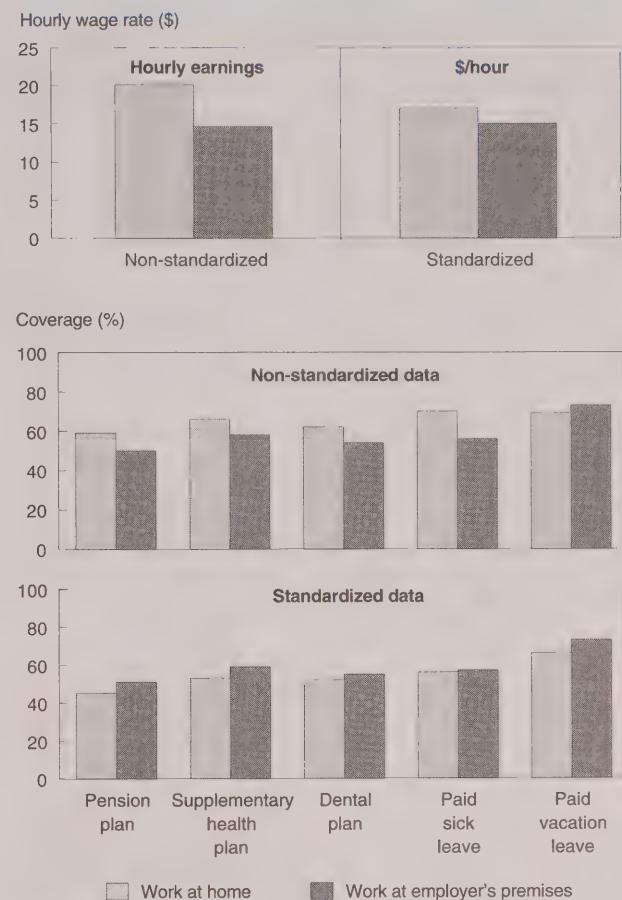
limitations, however, restrict the focus to comparisons of wages and non-wage benefits. Both the hourly wage rate and non-wage benefits data—specifically employer-sponsored pension, medical, or dental plan coverage, and vacation and sick leave entitlements—analyzed in this study come from the 1995 SWA. Although somewhat dated, this survey is the only source of information available.

An earlier study (Pérusse, 1998) found that employees who usually worked at home earned an average hourly wage higher than that of their non-home-based counterparts (\$20.15 versus \$14.65). The former were also more likely to be covered by an employer-sponsored pension, dental or medical plan, and entitled to paid sick leave (Chart). Nevertheless, since both the wage rate and non-wage benefit coverage depended on many other factors including age, sex, industry, occupation, education, experience, job tenure, union membership and corporate size, the data had to be standardized to arrive at more statistically meaningful comparisons.⁷ Standardization changed the picture markedly. For example, standardizing by age, sex and occupation narrowed the hourly wage differential (to \$17.07 versus \$15.07) between the two groups of workers and reversed the results with respect to pension, health and dental plan coverage. Thus, the standardized results confirmed that wage rates and non-wage benefits are the combined result of many factors, and that the place of work may not necessarily be an important determinant, if at all.

Summary

Working from home offers potential advantages as well as disadvantages to employers, employees and the self-employed alike. Although no consistent time series exist, data from various sources suggest that the number of Canadians doing some or, in a few cases, all of their regular work at home has been increasing over the past three decades. That growth, however, has been matched by similar proportionate increases in the employment of non-home-based workers, leaving the share of home-based work relatively unchanged. For operational reasons, the practice is most common among social science and educational workers, and least common among manufacturing, construction, accommodation and food service, and health workers. Innovations in information technology in the past decade or two appear to have affected home-based workers more strongly. Use of the computer, e-mail, Internet and telephone

Chart: Standardization narrowed wage differences and reversed most non-wage disparities.



Source: Survey of Work Arrangements, 1995

for work purposes is much higher among home-based workers than among those who work only outside the home. Also, a larger percentage of home-based workers (employees and self-employed alike) felt their work had become more interesting as a result of computers.

The future of home-based work, especially for employees, rests on many factors. From the employer's side, these include issues related to co-ordination and communication with employees, concerns about the security of confidential information, and problems and costs of providing computer technical support at home. From the employee's side, the appeal of a

home-based work arrangement is that it is not static and can change according to personal and family demands. For the self-employed, zoning laws will continue to play an important role.

Perspectives

Notes

1 According to the Labour Force Survey, self-employment in the professional, scientific and technical service industry (which includes many consultants) more than doubled (+119%) from 1989 to 1999, much more than the 37% rise in overall self-employment during the same period.

2 The fixed-effects modelling results of the Lin et al. study show a statistically significant but empirically small negative (positive) relationship between self-employment and unemployment (full-time paid employment).

3 The 1996 Census was not used in this study because the definition of the home-based worker was more restrictive: The term *usually work at home* was defined as *most of the time* (for example, 3 days out of 5). Not surprisingly, under this tighter definition, the 1996 Census yielded a count of 1,086,000 home-based workers, hardly any different than the 1,079,000 in the 1991 Census. (The 2001 Census also used the more restrictive definition.)

4 Nortel Networks is an example of a large Canadian high-tech company that claims to use work-from-home arrangements (or HOMEbased program, as it is referred to by the company) to attract workers and retain employees. In 2000, about 17% (13,000) of the company's global employees belonged to its telework program. Nortel estimates that adoption of this program has resulted in a 20% reduction in worker absenteeism, a 10% improvement in employee job satisfaction, and a 24% reduction in staff turnover. The company also estimates an annual savings of \$20 million in real estate costs due to its telework program, and an annual reduction of 30 million pounds of greenhouse gas pollutants into the atmosphere as a result of fewer employees commuting (Telecommute Connecticut-Research).

5 Canadian tax laws permit persons using their home as a workplace to deduct some home depreciation costs and other expenses such as energy use when filing their tax returns.

6 Though likely more interesting, the survey data do not allow the estimation of proportion of scheduled weekly work time performed at home.

7 Standardization is a statistical technique that makes it possible to assess observed differences in a particular characteristic between one group and another, assuming that these two groups are identical in some respect. In the case of paid work at home, it is of interest to know whether merely working at home is associated with pay that differs from that obtained from working at an employer's premises. To eliminate the effect of age, sex and occupation on their wages, respondents are categorized as home worker/non-home-worker in such a way that each combination of variables is represented in the same proportion as in the overall group of workers.

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Trends in part-time job search

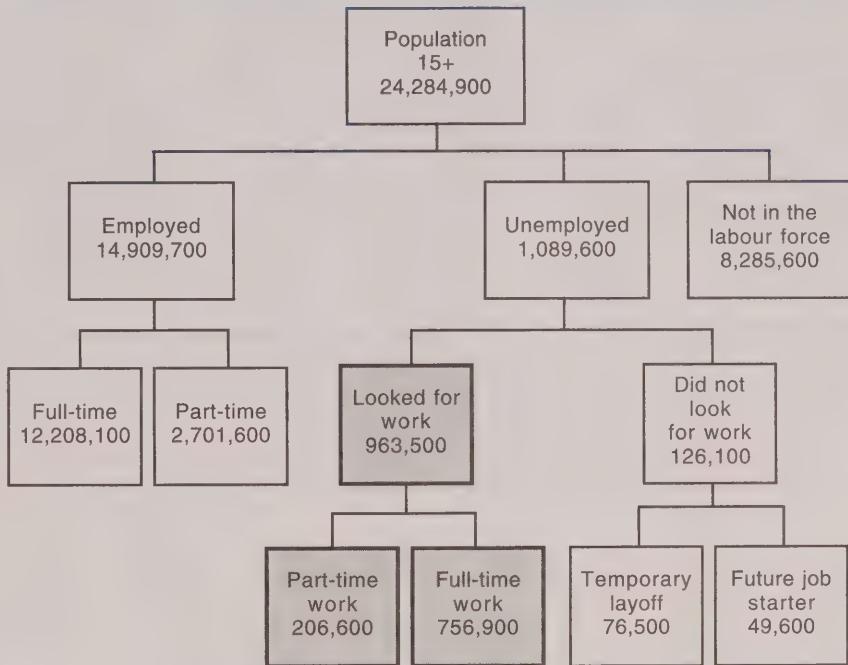
Berouk Terefe

PART-TIME WORKERS have garnered considerable interest over the years. Are they increasing as a proportion of the labour force? Do they work part time by choice? Do they receive fewer benefits than full-timers? Perhaps not surprisingly, the focus has been almost exclusively on people who are employed. The Labour Force Survey (LFS) does, however, ask the unemployed whether they are looking for full- or part-time work. Are the trends and characteristics of the two groups different? This paper explores these issues.

The first part of the paper discusses trends in unemployed *job seekers* of full- and part-time work between 1976 and 1996, and between 1997 and 2000. The second part isolates the contribution of demographic factors (such as the increased participation of women in the labour force and the aging of the labour force) and trend (all other factors) to changes in the overall part-time share between 1976 and 1996 (to exclude the effect of the 1997 LFS redesign). The third part looks at the demographic characteristics of the two groups of unemployed job seekers in 2000.

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Labour force status, 2000



Source: Labour Force Survey

The unemployed labour force consists of two main groups: a very large job-seeking component, and a much smaller non-job-seeking group. The job-seeking group splits into two sub-components: those looking for full-time work (30 hours or more per week), and those looking for part-time work (less than 30 hours). The non-job-seeking unemployed group also consists of two sub-groups: persons on temporary layoff, and

those starting a job in the next few weeks (often referred to as future starts) (see *Labour force status, 2000*).

Trends in full- and part-time job seeking

The number of unemployed increased by 95% (from 738,200 to 1,436,900) between 1976 and 1996. Even though a larger numerical increase was recorded for full-time job seekers (531,200), part-time job seekers had a higher percentage

increase (146% versus 96%). The number of unemployed men seeking full-time work increased by 96%, as did the number of women. In contrast, the number of unemployed men seeking part-time work increased by 188% while the corresponding rise for women was 124%.

In line with the business cycle, the share for full-time job seekers fluctuated between 75.0% and 81.7% from 1976 to 1996 (Chart A). The level in 1996 (75.5%) was virtually the same as in 1976 (Table 1). On the other hand, the part-time job seekers' share showed a slight but steady upward trend between 1976 and 1996, from 11.7% to 14.8%.

Between 1996 and 1997, the number of full-time job seekers fell from 1,084,800 to 1,012,400 and their share declined sharply (from 75.5% to 73.4%). In contrast, the number of part-time job seekers rose from 212,400 to 238,600 (all of the increase occurring among women) and their share jumped from 14.8% to 17.3% (Chart B).¹

Between 1997 and 2000, the numbers of both full- and part-time job seekers registered steady declines—to 756,900 and 206,600 respectively—as could be expected in good economic times. However, their shares diverged—full-time job seekers dropping to 69.5%, part-time climbing to 19.0%. These changes in shares could be attributed mainly to revisions to the LFS questionnaire in 1997 (see *The 1997 LFS questionnaire redesign*).

Factors affecting part-time job seeking

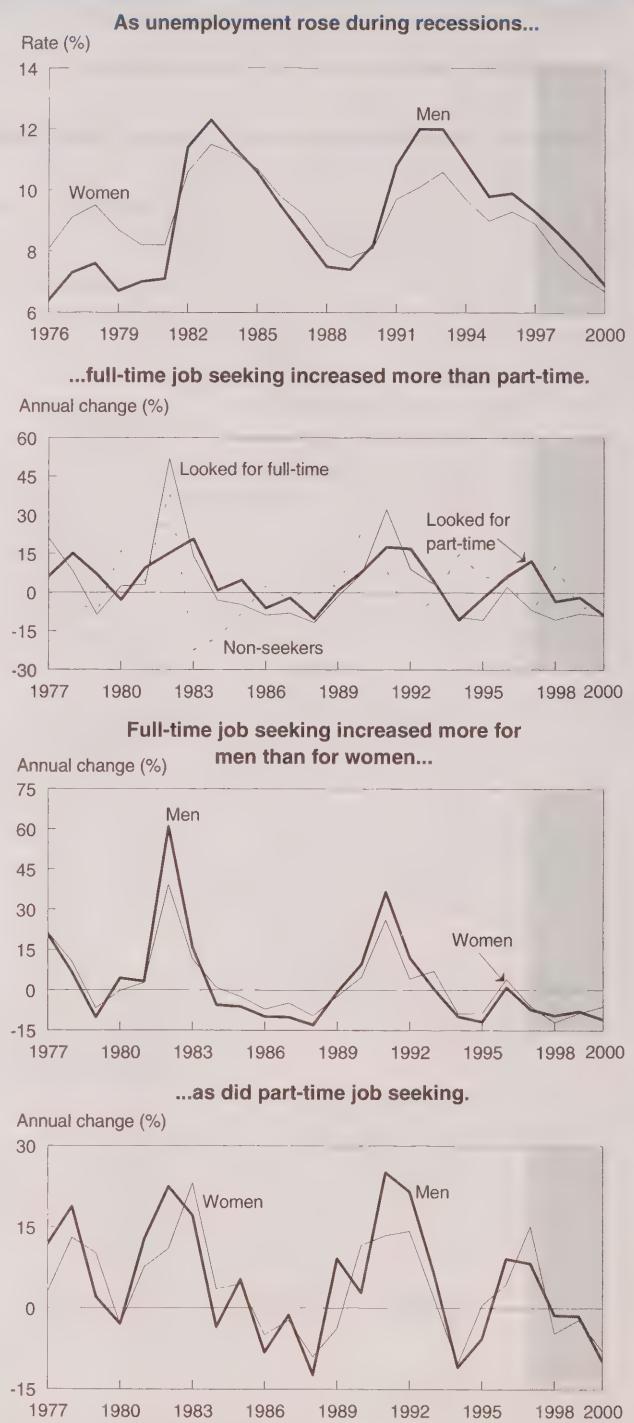
Because of the break in time series caused by the 1997 Labour Force Survey redesign, this section focuses on 1976 to 1996. The change in the share of part-time job seekers between 1976 and 1996 (3.1 percentage points) was decomposed to isolate the contributions resulting from changes in demographic composition (sex and age), and from trend (see *Decomposition formula*).

The rise in part-time jobs sought between 1976 and 1996 was due almost entirely to trend. The contribution of the trend was 99% (3.06 percentage points), while only 1% (0.02 points) of the rise was due to demographic shifts (Table 2). Almost all of the trend contribution came from 15 to 24 year-olds.

Characteristics of job seekers

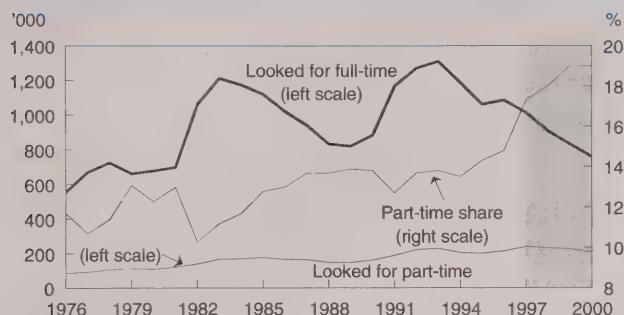
In 2000, of the 1,089,600 people who were unemployed, 69% were looking for a full-time job while 19% were looking for a part-time job.² The rest were

Chart A: Unemployed by type of job sought



Source: Labour Force Survey

Chart B: The share of part-time job seeking increased after the 1997 LFS revision.



Source: Labour Force Survey

on temporary layoff (7%) or waiting to start a job in the near future (5%). More than 58% of those seeking full-time work were men, while 60% of those seeking part-time jobs were women (Table 3).

More men than women were seeking full-time jobs, by a ratio of 1.4 to 1. Most of these people were aged 25 to 54, and 55% of both men and women had no more than high-school equivalent education (compared with about 80% for the 15-to-24 year olds). Single men made up the largest proportion (48%) of full-time job-seeking men, while among women, most (55%) were married.

Part-time job seekers, on the other hand, were mostly women, by a ratio of 1.5 to 1. Most were between 15 and 24, with high-school equivalent or less education, and single with no children. Women also accounted for 91% of part-time job seekers aged 25 to 54 with children under 16 at home.

Employed part-time workers are a very heterogeneous group (Blank, 1994). Most women use part-time work as a temporary alternative to full-time work or to being out of the labour market; few women use

it as a transition to full-time employment. Also, women with younger children, more children, or higher levels of other sources of income are more likely to work part time.³ The current study indicates, however, that only 25% of part-time job-seeking women have younger children at home; of these women, 13% had preschool-aged children and 12% had children aged 5 to 12.

Summary

Over the last 25 years, the proportion of people seeking part-time work has increased steadily. The rise in the share of part-time job seekers in 1997 was significantly large—mainly because of revisions of ambiguous wording in the Labour Force Survey questionnaire.

Between 1976 and 1996, the increase in the share of part-time job seekers among the unemployed can be attributed almost entirely to trend, rather than to any demographic shifts. In 2000, part-time jobs were

Table 1: Share of unemployment

Year	Total	Looked	Looked	On	Future
		for	for	temporary	job
		full-time	part-time	layoff	starter
1976	100.0	75.0	11.7	9.4	4.0
1977	100.0	77.9	10.7	7.9	3.5
1978	100.0	78.3	11.4	6.8	3.5
1979	100.0	76.7	13.1	6.7	3.5
1980	100.0	76.2	12.3	8.3	3.2
1981	100.0	75.5	13.0	8.2	3.3
1982	100.0	78.7	10.3	8.8	2.2
1983	100.0	81.1	11.2	5.7	2.0
1984	100.0	81.7	11.7	4.6	2.0
1985	100.0	80.9	12.8	4.1	2.2
1986	100.0	80.0	13.0	4.9	2.1
1987	100.0	79.0	13.7	4.9	2.4
1988	100.0	77.9	13.7	5.7	2.7
1989	100.0	77.4	13.9	5.7	3.0
1990	100.0	76.3	13.8	7.4	2.5
1991	100.0	78.9	12.7	6.8	1.7
1992	100.0	79.4	13.7	5.4	1.5
1993	100.0	79.6	13.8	4.9	1.7
1994	100.0	78.3	13.5	5.9	2.3
1995	100.0	76.2	14.3	6.9	2.6
1996	100.0	75.5	14.8	7.3	2.4
1997	100.0	73.4	17.3	6.3	3.0
1998	100.0	70.9	18.0	7.6	3.4
1999	100.0	69.9	19.0	7.3	3.9
2000	100.0	69.5	19.0	7.0	4.5

Source: Labour Force Survey

Table 2: Effects of various factors on the share of part-time job seekers between 1976 and 1996

	Change in part-time job seeking rate	Proportion of change due to	
		Demographic shift*	Trend**
Both sexes	3.08	0.02	3.06
Men	1.93	-0.02	1.95
Women	1.15	0.04	1.11
15 to 24	2.36	-5.57	7.94
25 to 54	0.70	1.58	-0.88
55 and over	0.01	0.09	-0.08

Source: Labour Force Survey

* Keeping the rate of part-time job seeking constant, this represents the change in part-time job seeking rate due to changes in the share of the specific sex group or age group.

** Keeping the share of the specific sex group or age group constant, this represents the change in the rate of part-time job seeking due to changes in the rate of part-time job seeking.

sought mainly by women aged 15 to 24. Most were single with no children, and had no more than a high school equivalent education.

Perspectives

Notes

1 The redesigned LFS questionnaire was gradually phased in beginning with September 1996. By January 1997, the process was complete. The questionnaire changes affected mostly women since they form the overwhelming majority of part-time job seekers.

Decomposition formula

The data source used for the study is the Labour Force Survey. A decomposition was performed using a shift share analysis in order to isolate the contribution of the selected demographic variables, sex and age, and of the trend to changes in the growth of part-time job seekers. The end points used in the decomposition are 1976 and 1996. The decomposition was performed using the following formula.

$$X_{t+h} - X_t = \sum_{i=1}^n \left[\left(\frac{y_t^i + y_{t+h}^i}{2} \right) * (x_{t+h}^i - x_t^i) \right] + \sum_{i=1}^n \left[\left(\frac{x_t^i + x_{t+h}^i}{2} \right) * (y_{t+h}^i - y_t^i) \right]$$

X_t = overall part-time job seekers share at time t

x_t^i = part-time job seekers share for sex i or age group i at time t

y_t^i = total unemployment for sex or age group i at time t as a proportion of total unemployment

h = the number of years between the base year and the end year of the analysis

2 In 2000, approximately 18% of employed persons worked part time.

3 Blank's study analyzes the dynamics of adult women's labour market behaviour over a 14-year period between 1976 and 1989. The study explores labour supply choices among full-time, part-time, or no labour-market work.

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Table 3: Unemployed job seekers, 2000

	Both sexes		Men		Women	
	Full-time job seekers	Part-time job seekers	Full-time job seekers	Part-time job seekers	Full-time job seekers	Part-time job seekers
Total	756,900	206,600	442,500	81,800	314,400	124,800
%						
All ages	100	100	100	100	100	100
15 to 24	24	61	25	79	22	50
25 to 54	69	32	67	15	71	43
25 to 34	25	11	24	6	25	15
35 to 44	26	12	26	5	27	17
45 to 54	18	9	17	5	19	11
55 and over	8	6	8	6	7	6
Education	100	100	100	100	100	100
15 to 24 years	100	100	100	100	100	100
High school or less	80	94	82	95	77	92
Postsecondary certificate or diploma	16	5	14	5	18	6
University degree	4	1	4	1	6	1
25 years and over	100	100	100	100	100	100
High school or less	55	55	55	56	55	54
Postsecondary certificate or diploma	30	30	30	29	30	31
University degree	15	15	15	15	15	15
Marital status	100	100	100	100	100	100
Single	42	65	48	83	32	53
Married	48	29	44	14	55	39
Other	10	6	8	3	13	8
Family status	100	100	100	100	100	100
With children at home	34	23	28	7	42	34
Preschool age	10	9	9	3	12	13
5-12 years	12	8	10	2	16	12
13 years and over	11	6	9	2	15	9
Under 16, with parent(s) aged 25-54	24	17	21	4	30	25
Without children	66	77	72	93	58	66
Canada	100	100	100	100	100	100
Newfoundland	4	1	4	1	4	1
Prince Edward Island	1	0	1	0	1	0
Nova Scotia	4	3	4	3	4	3
New Brunswick	4	2	4	2	3	2
Quebec	31	21	32	19	30	23
Ontario	31	41	29	45	34	39
Manitoba	2	3	3	3	2	3
Saskatchewan	2	2	3	2	2	2
Alberta	7	10	7	10	7	10
British Columbia	13	15	14	14	12	16

Source: Labour Force Survey

The 1997 LFS questionnaire redesign

To improve data quality, several changes were made to the Labour Force Survey (LFS) questionnaire during the 1997 redesign. One was the removal of possible ambiguities related to the classification of full-time and part-time unemployed job seekers.

Prior to 1997, the relevant question was:

Is ... looking for a full-time or part-time job?

Full-time Part-time
(30 or more (less than 30
hours per week) hours per week)

Because the definitions of full-time and part-time were often not read to respondents by interviewers, people were free to provide their own interpretation. To remove the ambiguity, definitions for full-time and part-time were built into the question:

Did ... want a job with more or less than 30 hours a week?

The result was an increase in the proportion of unemployed persons seeking part-time work, with a corresponding decrease in the proportion looking for full-time work. This was clearly demonstrated during the phase-in period. In November 1996, three LFS rotation groups answered the old questionnaire, while the remaining three groups answered the new questionnaire.

Additional data sets, covering different periods, support the conclusions reached from the November 1996 results.

The 1997 introduction of the redesigned 1997 questionnaire resulted in a break of the LFS series on full-time/part-time job seekers—an upward shift in the share of those seeking part-time work, and the reverse for full-time work.

1999 income: an overview

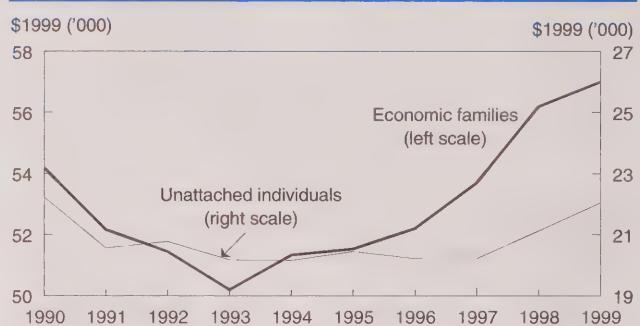
Cathy Cotton, Philip Giles and Heather Lathe

Market income

Average market income for Canadian families of two or more people was \$57,000 in 1999, up 1.4% from the previous year after adjusting for inflation. This marks the sixth year of sustained growth, although at a slower rate than in the two previous years. Average market income increased by 13.6% from 1993 when it was at a low of \$50,200.

Average market income for persons not living in families (unattached individuals) was \$22,000 in 1999, up by 4.3% from the previous year. This was the second year in a row that the growth in average market income of unattached individuals exceeded 4%. Mainly because of the increases in 1998 and 1999, the average market income of unattached individuals finished the decade at basically the same level as 10 years earlier.

Chart A: Market income

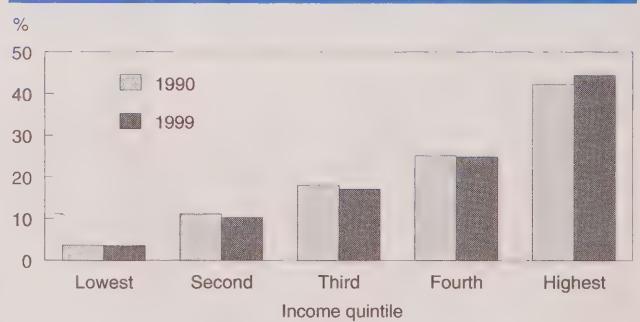


Sources: Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999

Inequality of market income

If families are ranked by their income level from lowest to highest, the top 20% of families earned 44.4% of all market income in 1999, compared with 3.5% for the bottom 20% of families. For every dollar earned by the bottom 20%, nearly 13 dollars were earned by the top 20%.

Chart B: Market income shares



Sources: Survey of Consumer Finances, 1990; Survey of Labour and Income Dynamics, 1999

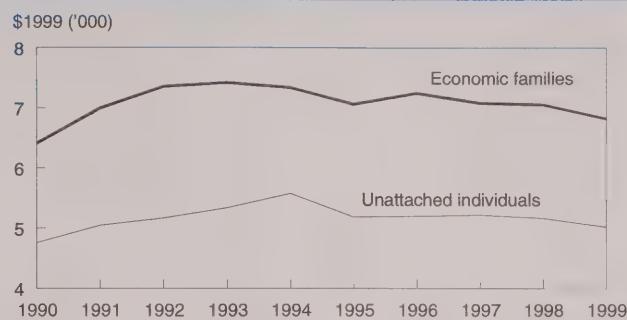
The authors are with the Income Statistics Division. Cathy Cotton can be reached at (613) 951-2300 or cathy.cotton@statcan.ca; Philip Giles, at (613) 951-2891 or giles@statcan.ca; Heather Lathe, at (613) 951-3808 or heather.lathe@statcan.ca.

Downward trend in government transfers

Families of two or more persons received an estimated \$6,800 in government transfers in 1999, a decline of 3.3% from 1998. Government transfers to families peaked in 1993 and have since fallen by 8.0%.

Unattached individuals received \$5,000 on average in transfers in 1999, down 2.9% from 1998 and 10.0% from the peak reached in 1994.

Chart C: Average government transfers



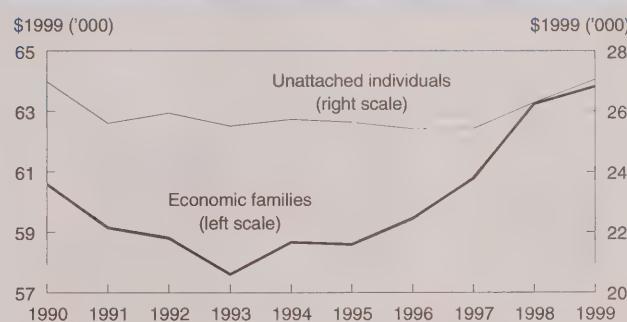
Sources: Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999

Total income

When all income sources are considered, Canadian economic families received an average of \$63,800 in total income in 1999, an increase of 0.9% from 1998. Average total income for unattached individuals was \$27,100, an increase of 2.9%. Total family income increased 10.8% from 1993, when it was at its lowest level for the decade.

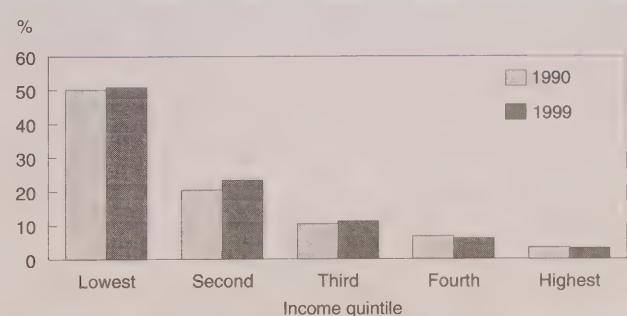
For the 20% of families with the lowest incomes, government transfers contributed about half (50.8%) of all income received in 1999. For families in the top quintile, only 3.2% came from transfers. Because of transfers, the distribution of total income is more 'equal' than market income. On the basis of total income, the top 20% of families received about six and a half dollars for every dollar received by the bottom quintile. In aggregate terms, the top 20% of families got 40.9% of total income, versus 6.3% for the bottom 20% of families. This sharing is slightly more unequal than ten years ago when the percentages were 39.1% and 6.4%.

Chart D: Average total income



Sources: Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999

Chart E: Transfers as a proportion of total income



Sources: Survey of Consumer Finances, 1990; Survey of Labour and Income Dynamics, 1999

Data sources and definitions

Data for this study are taken from two sources: The **Survey of Labour and Income Dynamics** is a longitudinal household survey that began in January 1993. The **Survey of Consumer Finances** was an annual supplement to the Labour Force Survey.

Market Income: total earnings (from paid employment or self-employment), investment income, retirement income (private pension plan) and "other income." It excludes government transfers. Market income is also known as income before taxes and transfers.

Government transfers: all direct payments to individuals and families by the federal, provincial and municipal government: Old Age Security pensions, the Guaranteed Income Supplement, Spouse's Allowance, Canada and Quebec Pension Plan benefits, Child Tax Benefits, Employment Insurance benefits, workers' compensation benefits, credits for the GST/HST, provincial or territorial refundable tax credits, social assistance payments and other government payments.

Total income: income from all sources before deduction of federal and provincial taxes; that is, market income plus government transfer payments.

After-tax income: total income minus income taxes.

Economic family: two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption.

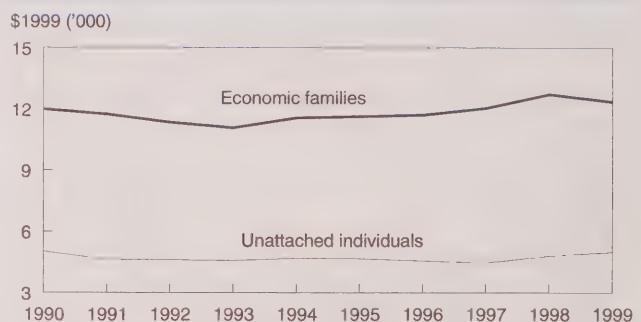
Quintiles: For all measures of income, quintiles are formed by ranking the families in ascending order of income and dividing the entire sample into five equal parts. The top quintile consists of the 20% of families with the highest after-tax incomes, and the bottom quintile, the 20% of families with the lowest incomes.

Drop in income taxes for families

In 1999, the average family paid \$12,300 in income taxes. This is a decrease of 2.8% from 1998 when taxes were at their highest level for the decade.

The proportion of tax paid by each income group has shifted during the last 10 years. The proportion of taxes paid by families in the bottom quintile has increased but remains relatively low, having moved from 1.6% in 1990 to 1.9% in 1999. Families in the highest quintile also paid a somewhat larger share of taxes in 1999, accounting for 51.8% of aggregate income taxes versus 48.7% in 1990.

Chart F: Average income taxes



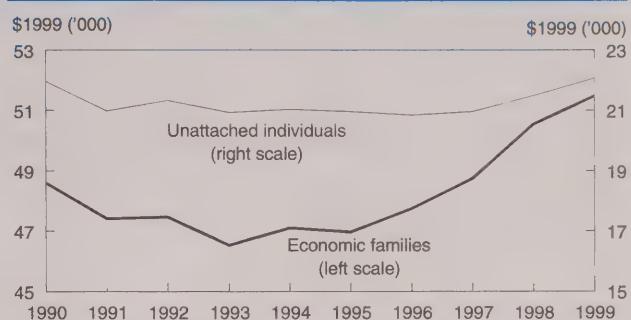
Sources: *Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999*

After-tax income

The average family received an estimated \$51,500 in after-tax income in 1999, up 1.9% from 1998. For unattached individuals, the average after-tax income was \$22,100, up 2.7% from the previous year.

Like transfers, taxes reduce income inequality. The top 20% of families received 38.3% of all after-tax dollars compared with 7.4% for the bottom quintile—a ratio of about 5 to 1.

Chart G: Income after tax



Sources: Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999

Fewer families in low income in 1999

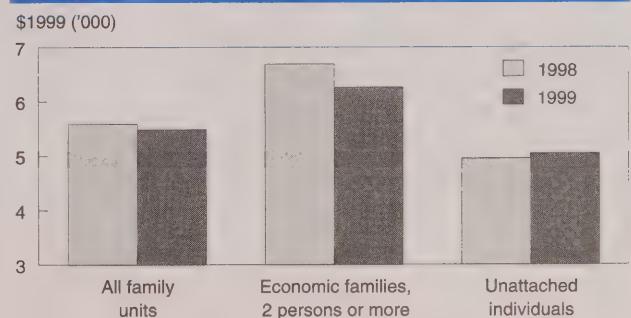
An estimated 723,000 families were in low income after tax in 1999, down from 737,000 in 1998. The family low income rate was 8.6%, the lowest rate since 1990 (8.5%). The financial situation of families below the low income cutoff also showed some improvement. On average, these families would have needed an additional \$6,300 in after-tax dollars to reach the low income cutoff, compared to \$6,700 in 1998.

Among unattached individuals, 1,280,000 were in low income in 1999, virtually the same as in 1998. They would have needed an additional \$5,000 to rise above the low income cutoff in 1999.

The low income rate for persons dropped as well. In 1999, 11.8% of all Canadians, about 3.6 million persons, were in low income based on their income after tax. After climbing throughout the early 1990s, the prevalence of low income peaked in 1996 at 14.0% and has been declining ever since.

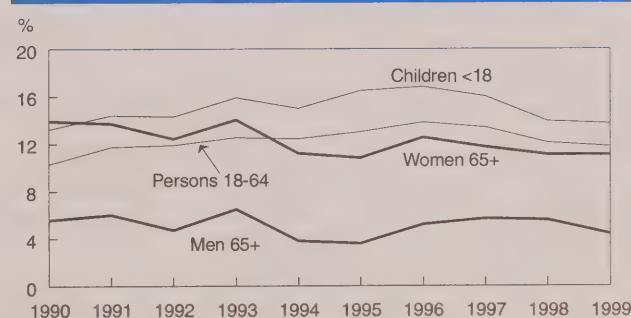
In 1999, 962,000 children lived in low income families, down from 978,000 in 1998. The proportion has been falling since 1996 when it peaked at 16.8% on an after-tax basis. The rate then fell to 13.9% in 1998 and 13.7% in 1999.

Chart H: Average after-tax amount needed to reach low income cutoff



Source: Survey of Labour and Income Dynamics

Chart I: Low income rates based on income after tax

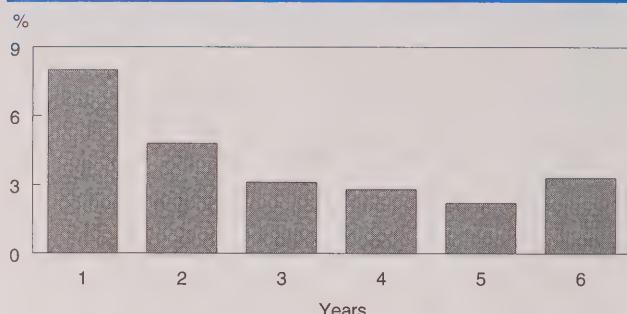


Sources: Survey of Consumer Finances, 1990-1995; Survey of Labour and Income Dynamics, 1996-1999

Low income touches almost one in four over a six-year period

About a quarter of Canadians experienced low income for at least one year during the six-year period starting with 1993. More specifically, 8.0% experienced one year of low income and 4.8% experienced two years (not necessarily consecutive). At the other extreme, 3.3% of the population remained in low income throughout the full six years.

Chart J: Low income persistence, 1993-1998



Source: Survey of Labour and Income Dynamics

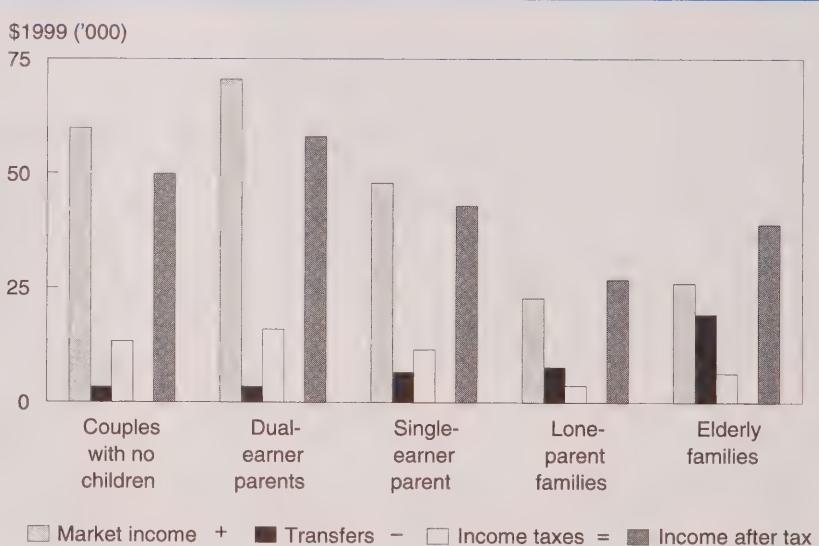
Effect of transfers and taxes across family types

The average married couple with no children at home earned about \$59,900 in market income in 1999. They received an additional \$3,300 in government transfers but paid out \$13,300 in taxes. So, on average, they received \$49,900 after tax; after netting out taxes and transfers, they retained 83.4% of their market income.

Dual-earner parents had higher market income (\$70,500) and higher after-tax income (\$58,100), but the portion of market income they retained was much the same—82.4%. Single-earner couples with children had substantially lower levels of market income in 1999, \$47,800 on average. But with somewhat higher government transfers and lower income tax, their after-tax income, at \$42,900, was 89.7% of their market income.

Lone-parent families averaged \$22,800 in market income in 1999. They received more in government

Chart K: Transfers and taxes by family type



Source: Survey of Labour and Income Dynamics

transfers than they paid in taxes; after-tax income was therefore higher at \$26,800. The same is true for families headed by a senior. Their market income averaged \$25,900 in 1999 while after-tax income was \$38,800.

Unattached seniors, particularly women, registered very low levels of income. Senior unattached men averaged \$22,600 after tax, while women averaged \$18,400.

Perspectives

Fact-sheet on work absences

Ernest B. Akyeampong

THERE ARE MANY KINDS OF ABSENCE. Some, like annual vacations, are generally considered to be economically healthy for both the organization and the employee. Also, they are usually scheduled so that their effect upon the organization can be more easily absorbed; the same can be said of statutory holidays. Others, such as those caused by illness and family-related demands, are generally unavoidable and often unscheduled. Some absences, like those due to inclement weather, are uncontrollable.

'Absenteeism'—used generally to refer to absences that are avoidable, habitual and often unscheduled—is a source of irritation to employers and co-workers. Unscheduled absences are disruptive to proper work scheduling and output, and costly to an organization and the economy as a whole. Invariably, they are work absences for personal reasons (namely, illness or disability, and personal or family responsibilities).

Although absenteeism is widely acknowledged to be a problem, it is not easy to quantify. The dividing line between avoidable and unavoidable absences is difficult to draw, and absenteeism generally masquerades as legitimate absence. A data source such as the Labour Force Survey (LFS) can provide measures of time lost due to illness or disability and personal or family responsibilities, but within these categories, it cannot distinguish between avoidable and unavoidable, scheduled and unscheduled absences. LFS data on all absences for these personal reasons can, however, be analyzed to identify patterns or trends that indicate the effect of absenteeism (see *Data source and definitions*).

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Table 1: Demographic characteristics

In 2000, excluding women on maternity leave, an estimated 6.3% (621,000) of full-time employees missed some work each week for personal reasons: 4.8% for own illness or disability, and 1.5% for personal or family responsibilities.

As a result of these absences, full-time employees lost about 3.2% of their work time each week.

On average, each full-time employee lost 8.0 days over the year for personal reasons (about 6.7 for own illness or disability, and 1.3 for personal or family demands).

In total, full-time employees missed an estimated 79 million workdays for personal reasons in 2000.

On average, men working full time lost fewer days (7.0 or 5.9 for illness plus 1.1 for personal/family demands) than female full-time employees (9.4 or 7.8 plus 1.5).

The presence of pre-school-aged children tends to exert a strong influence on work absences for personal or family responsibilities, especially for women. In such families, women employed full time lost an average of 4.0 days in 2000; men, 2.1 days.

Workdays missed by both men and women tended to rise with age, from an average of 5.3 days for youth (15-19 years) to 11.1 days for full-time employees aged 55 to 64.

Table 2: Industry and sector

Work absence rates differ by sector (public or private) and industry. Contributing factors include the nature and demands of the job, the male/female composition of the workforce, and the union density—the last being a strong determinant of the presence or lack of paid sick/family leave entitlements.

Data source and definitions

The data in this article are annual averages from the Labour Force Survey (LFS). They refer to full-time employees holding only one job. Part-time, self-employed and unpaid family workers are excluded because they generally have more opportunity to arrange their work schedules around personal or family responsibilities. Multiple jobholders, too, are excluded because it is not possible using LFS data to allocate time lost, or the reason for it, to specific jobs. Women on maternity leave are also excluded. Employed persons on long-term illness or disability leave (exceeding one year) are included.¹

Personal reasons for absence are split into two categories: "own illness or disability" and "personal or family responsibilities" (caring for own children, caring for elder relative, and other personal or family responsibilities). Absences for these two reasons represented about 31% of all time lost by full-time paid workers each week in 2000. Vacations, which accounted for about 49% of total time away from work, are not counted in this study, nor are statutory holidays, which represented 5%. Maternity leave represented 8% and other reasons, 7%.

The **incidence of absence** is the percentage of full-time paid workers reporting some absence in the reference week. In calculating incidence, the length of work absence—whether an hour, a day, or a full week—is irrelevant.

The **inactivity rate** shows hours lost as a proportion of the usual weekly hours of full-time paid workers. It takes into account both the incidence and length of absence in the reference week.

Days lost per worker are calculated by multiplying the inactivity rate by the estimated number of working days in the year (250).

Full-time employees in the public sector lost more work time in 2000 (about 10.2 days on average) for personal reasons than their private-sector counterparts (7.4 days).

At the major industry level, the most workdays missed were by employees in health care and social assistance (12.5 days), and in transportation and warehousing (10.3).

The lowest averages were recorded by full-time workers in the professional, scientific and technical industry (4.0 days) and in accommodation and food services (6.3).

Reasons for work absences in the LFS

The LFS sets out the following reasons for being away from work:

- own illness or disability
- caring for own children
- caring for elder relative (60 years or older)
- maternity leave (women only)
- other personal or family responsibilities
- vacation
- labour dispute (strike or lockout)
- temporary layoff due to business conditions
- holiday (legal or religious)
- weather
- job started or ended during week
- working short time (because of material shortages, plant maintenance or repair, for instance)
- other

As normally published, personal or family responsibilities consist of caring for own children, caring for elder relative, and other personal or family responsibilities.

Table 3: Occupation

By occupation as by industry, differences arose mainly from time lost due to illness or disability.

Full-time employees in health occupations (13.3), in occupations unique to production (10.5), and in trades, transport and equipment operator positions (9.3), recorded the most days lost in 2000.

Workers in managerial jobs (4.4), in natural and applied sciences (5.0), and in positions in culture and recreation (5.1) recorded the fewest days lost.

Table 4: Union coverage, job status, workplace size and job tenure

Full-time workers who belonged to unions or were covered by collective agreements missed almost twice as many workdays on average in 2000 for personal reasons as their non-unionized counterparts (11.2 versus 6.4).

Workers who considered their jobs to be permanent (and more likely to be unionized) lost on average more workdays (8.2) than those who said their jobs were not permanent (6.1).

Days lost tended to rise with firm size, increasing from a low of 6.5 in firms with fewer than 20 employees (firms more likely to have low union rates) to a high of around 9.4 in firms with 100 or more (firms likely to have high union rates).

Days lost tended to rise with job tenure, with almost all the differences arising from sickness and disability. They rose from an average of 5.4 days among persons with tenure of up to one year to 10.5 among those with more than 14 years (the latter group likely being older).

Table 5: Province and CMA

Work absence levels differed by geographic area, with most of the variation again arising from illness or disability.

Full-time employees in Saskatchewan and Nova Scotia lost on average most work time in 2000 (9.4 days). Those in Prince Edward Island (6.9), Ontario (7.1), and Alberta (7.6) lost the least time.

Among the census metropolitan areas, workers in St. John's, Trois Rivières, Hull and Victoria lost the most workdays (an average of more than 10 days per full-time worker). Those in Toronto (6.2), London (6.2), and Calgary (6.3) lost the least time.

Note

1 Some human resource practitioners exclude persons on long-term illness or disability leave (exceeding one year) from their attendance management statistics. Such persons are, however, included in Statistics Canada's work absence estimates if they count themselves as employed (that is, they continue to receive partial or full pay from their employer). In 2000, the number of employed persons on such long-term illness or disability leave averaged only 17,000 in a typical week. Their exclusion would have reduced the weekly work absence incidence for illness or disability from 4.8% to 4.6%, the inactivity rate from 2.7% to 2.5%, and days lost per worker that year from 6.7 to 6.3.

Related reading

Akyeampong, E.B. *Work Absence Rates, 1987 to 1998*. Catalogue no. 71-535-MPB, no. 10. Ottawa: Statistics Canada, 1999.

---. "Time loss from work for personal reasons." *The Labour Force* (Statistics Canada, Catalogue no. 71-001-XPB) 44, no. 5 (May 1988): 87-121.

---. "Work absence rates, 1995." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 8, no. 3 (Autumn 1996): supplement.

---. "Work absences: new data, new insights." *Perspectives on Labour and Income* 10, no. 1 (Spring 1998): 16-22.

Haggar-Guénette, C. "Work injuries in Canada, 1982 to 1986." *The Labour Force* (Statistics Canada, Catalogue no. 71-001-XPB) 44, no. 3 (March 1988): 85-120.

Haggar-Guénette, C. and J. Proulx. "Back injuries at work, 1982-1990." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 4, no. 3 (Autumn 1992): 31-37.

Perspective

Table 1: Absence rates for full-time paid workers by sex, age, education and presence of children, 2000, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
Age		%			%			days	
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
15 to 19	5.2	4.0	1.2	2.1	1.7	0.4	5.3	4.3	0.9
20 to 24	5.3	4.0	1.3	2.2	1.8	0.4	5.5	4.5	1.0
25 to 34	6.2	4.6	1.7	2.8	2.2	0.6	6.9	5.5	1.4
35 to 44	6.6	4.8	1.7	3.3	2.8	0.6	8.3	7.0	1.4
45 to 54	6.4	5.1	1.3	3.5	3.1	0.4	8.9	7.8	1.1
55 to 64	7.0	5.6	1.4	4.4	3.9	0.5	11.1	9.8	1.4
65 and over	4.9	3.6	--	3.4	3.0	--	8.6	7.5	--
Men	5.5	4.1	1.4	2.8	2.4	0.4	7.0	5.9	1.1
15 to 19	5.1	3.7	1.4	2.2	1.7	0.4	5.4	4.3	1.1
20 to 24	5.0	3.7	1.3	2.1	1.7	0.4	5.2	4.2	1.0
25 to 34	5.3	3.9	1.4	2.4	1.9	0.5	6.0	4.9	1.2
35 to 44	5.4	3.9	1.5	2.7	2.3	0.5	6.9	5.6	1.2
45 to 54	5.5	4.4	1.1	3.2	2.9	0.4	8.0	7.2	0.9
55 to 64	6.4	5.2	1.2	4.1	3.7	0.5	10.3	9.2	1.1
65 and over	5.9	--	--	4.5	--	--	11.3	--	--
Women	7.5	5.7	1.8	3.8	3.1	0.6	9.4	7.8	1.5
15 to 19	5.3	4.4	--	2.0	1.8	--	5.0	4.4	--
20 to 24	5.8	4.5	1.3	2.4	2.0	0.4	5.9	4.9	1.1
25 to 34	7.5	5.5	2.0	3.3	2.6	0.7	8.3	6.5	1.7
35 to 44	8.1	6.0	2.0	4.2	3.5	0.7	10.5	8.8	1.7
45 to 54	7.4	5.9	1.5	4.0	3.4	0.6	10.0	8.6	1.4
55 to 64	7.9	6.2	1.6	5.0	4.3	0.7	12.5	10.7	1.7
65 and over	--	--	--	--	--	--	--	--	--
Educational attainment									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Less than Grade 9	7.2	6.0	1.3	4.8	4.4	0.4	12.0	10.9	1.1
Some secondary	7.6	6.0	1.6	4.4	3.8	0.6	11.0	9.6	1.4
High school graduate	6.1	4.8	1.3	3.2	2.8	0.4	8.0	6.9	1.1
Some postsecondary	6.6	4.8	1.8	3.1	2.5	0.6	7.8	6.3	1.5
Postsecondary certificate or diploma	6.5	4.9	1.6	3.2	2.7	0.5	8.1	6.8	1.3
University degree	5.2	3.6	1.6	2.2	1.7	0.5	5.5	4.2	1.4
Presence of children									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
With children	6.8	4.9	1.9	3.5	2.8	0.7	8.6	7.0	1.6
Preschool-aged (under 5 years)	7.7	4.7	3.0	3.5	2.4	1.1	8.7	5.9	2.8
5 to 12 years	6.8	5.0	1.9	3.5	3.0	0.5	8.7	7.4	1.2
13 years and over	6.1	4.9	1.3	3.4	3.0	0.4	8.6	7.5	1.1
Without children	5.9	4.7	1.2	3.0	2.6	0.4	7.5	6.5	1.0

Source: Labour Force Survey

* Absent workers divided by total.

** Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

Table 2: Absence rates for full-time paid workers by industry and sector, 2000, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
		%	%		%	%		days	
All industries	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Public employees	7.8	6.1	1.7	4.1	3.4	0.6	10.2	8.6	1.6
Private employees	5.9	4.4	1.5	3.0	2.5	0.5	7.4	6.2	1.2
Goods-producing	6.3	4.7	1.5	3.3	2.8	0.5	8.3	7.1	1.2
Primary	5.6	4.0	1.5	3.2	2.5	0.6	7.9	6.3	1.5
Agriculture	5.5	3.5	2.1	2.6	1.9	0.7	6.4	4.7	1.8
Other	5.6	4.3	1.3	3.4	2.8	0.6	8.5	7.1	1.4
Utilities	6.8	4.8	1.9	3.3	2.6	0.7	8.1	6.5	1.7
Construction	5.6	4.0	1.6	2.9	2.4	0.5	7.3	6.0	1.2
Manufacturing	6.5	5.0	1.5	3.4	3.0	0.5	8.6	7.5	1.1
Durable	6.5	4.9	1.6	3.3	2.8	0.5	8.1	6.9	1.2
Non-durable	6.6	5.2	1.4	3.7	3.3	0.4	9.2	8.2	1.0
Service-producing	6.3	4.8	1.5	3.1	2.6	0.5	7.9	6.6	1.3
Trade	5.4	4.1	1.3	2.6	2.2	0.4	6.4	5.4	1.0
Wholesale	5.3	3.8	1.5	2.3	1.9	0.4	5.8	4.8	1.0
Retail	5.5	4.2	1.2	2.7	2.3	0.4	6.7	5.7	1.1
Transportation and warehousing	6.7	5.2	1.4	4.1	3.6	0.5	10.3	9.0	1.3
Finance, insurance, real estate and leasing	5.9	4.1	1.7	2.7	2.1	0.5	6.7	5.3	1.4
Finance and insurance	6.0	4.3	1.7	2.8	2.3	0.5	7.0	5.7	1.4
Real estate and leasing	5.3	3.6	1.6	2.2	1.6	0.5	5.5	4.1	1.4
Professional, scientific and technical	5.0	3.2	1.8	1.6	1.2	0.4	4.0	2.9	1.1
Management, administrative and support	6.4	4.9	1.4	3.1	2.7	0.4	7.9	6.7	1.1
Educational services	6.6	5.0	1.6	3.4	2.7	0.7	8.4	6.7	1.7
Health care and social assistance	8.5	7.0	1.4	5.0	4.4	0.6	12.5	11.0	1.5
Information, culture and recreation	5.4	4.3	1.1	2.6	2.3	0.3	6.4	5.6	0.8
Accommodation and food services	4.9	3.6	1.3	2.5	2.0	0.5	6.3	5.0	1.3
Other services	5.5	4.0	1.6	2.5	1.9	0.5	6.2	4.8	1.4
Public administration	8.2	6.0	2.2	3.7	3.0	0.7	9.3	7.5	1.8
Federal	9.9	6.9	3.0	4.2	3.2	0.9	10.4	8.1	2.3
Provincial	8.0	6.0	2.0	3.7	3.0	0.7	9.2	7.6	1.7
Local, other	6.4	4.9	1.5	3.3	2.7	0.5	8.2	6.8	1.4

Source: Labour Force Survey

* Absent workers divided by total.

** Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

Table 3: Absence rates for full-time paid workers by occupation, 2000, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
	%	%	%	%	%	%	days		
All occupations	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Management	4.4	3.0	1.4	1.8	1.3	0.4	4.4	3.3	1.1
Business, finance and administrative	6.7	4.9	1.8	2.9	2.4	0.5	7.3	6.0	1.4
Professional	4.7	3.0	1.7	1.7	1.3	0.4	4.2	3.1	1.1
Financial and administrative	6.3	4.3	2.0	2.6	2.0	0.6	6.6	5.0	1.6
Clerical	7.4	5.6	1.8	3.4	2.9	0.5	8.5	7.2	1.3
Natural and applied sciences	5.2	3.6	1.6	2.0	1.5	0.5	5.0	3.8	1.1
Health	8.6	7.2	1.3	5.3	4.7	0.6	13.3	11.8	1.5
Professional	5.6	3.8	--	2.3	1.8	--	5.7	4.5	--
Nursing	8.8	7.6	1.2	5.8	5.1	0.7	14.5	12.7	1.7
Technical	8.3	7.1	--	5.3	4.8	--	13.2	11.9	--
Support staff	9.8	8.5	1.3	6.3	5.7	0.7	15.8	14.2	1.6
Social and public service	6.6	4.9	1.6	3.1	2.4	0.7	7.8	6.1	1.8
Legal, social and religious workers	7.5	5.6	1.8	3.6	2.9	0.7	8.9	7.2	1.7
Teachers and professors	5.9	4.4	1.5	2.8	2.1	0.7	7.1	5.3	1.8
Secondary and elementary	6.5	4.9	1.5	3.1	2.3	0.8	7.8	5.8	2.0
Other	4.5	3.1	1.4	2.1	1.6	0.6	5.3	3.9	1.4
Culture and recreation	5.0	3.8	1.2	2.0	1.7	0.3	5.1	4.3	0.8
Sales and service	6.0	4.7	1.3	3.2	2.7	0.5	8.0	6.8	1.2
Wholesale	4.5	3.3	1.3	2.1	1.7	0.4	5.3	4.4	0.9
Retail	5.5	4.2	1.3	2.6	2.2	0.5	6.6	5.4	1.2
Food and beverage	5.5	4.1	1.4	3.3	2.7	0.6	8.2	6.7	1.5
Protective services	6.5	5.2	1.3	4.1	3.5	0.6	10.2	8.7	1.5
Childcare and home support	8.0	6.4	1.6	4.0	3.4	0.6	10.1	8.5	1.6
Travel and accommodation	6.6	5.4	1.3	3.7	3.2	0.5	9.2	8.1	1.1
Trades, transport and equipment operators	6.4	5.0	1.5	3.7	3.3	0.5	9.3	8.2	1.2
Contractors and supervisors	5.7	4.2	--	3.1	2.7	--	7.8	6.7	--
Construction trades	6.7	5.1	1.6	3.7	3.2	0.5	9.3	8.0	1.3
Other trades	5.9	4.3	1.6	3.1	2.6	0.5	7.6	6.5	1.2
Transport equipment operators	6.9	5.6	1.3	4.6	4.2	0.5	11.6	10.4	1.1
Helpers and labourers	7.3	5.8	1.5	4.1	3.6	0.5	10.3	9.1	1.2
Occupations unique to primary industry	5.8	4.4	1.4	3.5	2.9	0.6	8.8	7.2	1.6
Occupations unique to production	7.6	6.0	1.6	4.2	3.7	0.5	10.5	9.2	1.3
Machine operators and assemblers	7.5	5.9	1.6	4.1	3.6	0.5	10.2	8.9	1.3
Labourers	8.2	6.7	1.5	4.8	4.2	0.5	11.9	10.6	1.3

Source: Labour Force Survey

* Absent workers divided by total.

** Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

Table 4: Absence rates for full-time paid workers by workplace size, job tenure, job status and union coverage, 2000, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
Workplace size									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Under 20 employees	5.4	3.9	1.5	2.6	2.1	0.5	6.5	5.3	1.2
20 to 99 employees	6.3	4.7	1.5	3.1	2.6	0.5	7.8	6.5	1.3
100 to 500 employees	7.1	5.5	1.6	3.8	3.2	0.6	9.4	8.0	1.4
Over 500 employees	6.9	5.5	1.4	3.7	3.2	0.5	9.3	8.1	1.2
Job tenure									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
1 to 12 months	5.3	3.8	1.5	2.2	1.7	0.4	5.4	4.3	1.1
Over 1 to 5 years	6.1	4.5	1.6	2.9	2.4	0.5	7.2	5.9	1.3
Over 5 to 9 years	6.6	4.9	1.7	3.5	2.9	0.6	8.6	7.1	1.5
Over 9 to 14 years	7.0	5.4	1.6	3.6	3.1	0.6	9.1	7.7	1.4
Over 14 years	7.0	5.6	1.4	4.2	3.7	0.5	10.5	9.2	1.3
Job status									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Permanent	6.4	4.9	1.5	3.3	2.8	0.5	8.2	6.9	1.3
Non-permanent	5.4	3.9	1.5	2.5	2.0	0.5	6.1	5.0	1.2
Union coverage									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Union member or covered by collective agreement	7.9	6.4	1.6	4.5	3.9	0.6	11.2	9.7	1.5
Non-unionized	5.5	4.0	1.5	2.6	2.1	0.5	6.4	5.2	1.2

Source: Labour Force Survey

* Absent workers divided by total.

** Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

Table 5: Absence rates for full-time paid workers by province, region and census metropolitan area (CMA), 2000, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
Province and region									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
Atlantic	6.5	5.1	1.4	3.6	3.1	0.5	8.9	7.7	1.2
Newfoundland	6.3	4.9	1.4	3.6	3.1	0.6	9.1	7.7	1.4
Prince Edward Island	5.9	4.4	1.5	2.7	2.3	0.4	6.9	5.8	1.1
Nova Scotia	7.0	5.4	1.6	3.8	3.3	0.5	9.4	8.2	1.3
New Brunswick	6.2	4.9	1.3	3.5	3.1	0.4	8.6	7.6	1.0
Quebec	6.4	5.0	1.3	3.5	3.1	0.4	8.8	7.8	1.0
Ontario	5.9	4.4	1.6	2.8	2.3	0.5	7.1	5.7	1.3
Prairies	7.0	5.1	1.9	3.3	2.6	0.6	8.1	6.6	1.6
Manitoba	7.1	5.3	1.9	3.5	2.8	0.6	8.6	7.1	1.6
Saskatchewan	7.8	5.9	2.0	3.7	3.1	0.7	9.4	7.7	1.6
Alberta	6.7	4.9	1.9	3.0	2.4	0.6	7.6	6.1	1.5
British Columbia	6.4	5.0	1.4	3.5	3.0	0.5	8.7	7.4	1.3
CMA									
Both sexes	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
All CMAs	6.2	4.7	1.5	3.0	2.5	0.5	7.5	6.4	1.2
St. John's	7.8	5.8	1.9	4.2	3.4	0.8	10.4	8.5	1.9
Halifax	7.2	5.5	1.7	3.7	3.2	0.5	9.4	8.0	1.4
Saint John	6.2	4.8	1.5	3.2	2.8	0.4	8.0	6.9	1.1
Chicoutimi-Jonquière	6.5	5.2	--	3.9	3.5	--	9.7	8.6	--
Québec	6.4	5.2	1.2	3.6	3.2	0.5	9.1	8.0	1.1
Montréal	6.5	5.1	1.4	3.4	3.0	0.4	8.4	7.4	1.0
Trois-Rivières	7.5	6.4	--	4.7	4.3	--	11.8	10.7	--
Sherbrooke	5.6	4.3	--	3.2	2.8	--	8.1	7.1	--
Hull	8.0	6.2	1.8	4.0	3.3	0.7	10.0	8.1	1.8
Ottawa	8.0	5.9	2.1	3.0	2.4	0.6	7.5	6.0	1.5
Sudbury	6.0	4.8	--	3.5	3.1	--	8.6	7.6	--
Toronto	5.2	3.8	1.4	2.5	2.0	0.5	6.2	4.9	1.2
Hamilton	5.4	4.2	1.2	2.6	2.3	0.3	6.5	5.6	0.9
St. Catharines-Niagara	6.5	5.0	1.5	3.4	2.9	0.5	8.4	7.3	1.1
London	5.2	3.9	1.2	2.5	2.0	0.5	6.2	5.1	1.1
Windsor	7.1	5.3	1.8	3.9	3.2	0.7	9.7	7.9	1.8
Kitchener-Waterloo	6.4	4.4	2.0	2.6	2.2	0.4	6.5	5.4	1.1
Oshawa	6.2	4.8	--	2.9	2.4	--	7.2	6.0	--
Thunder Bay	7.2	5.4	--	3.6	3.1	--	9.0	7.6	--
Winnipeg	7.3	5.4	1.9	3.4	2.8	0.6	8.5	6.9	1.6
Regina	8.1	6.5	1.6	3.9	3.4	0.5	9.8	8.5	1.3
Saskatoon	7.7	5.8	1.9	3.3	2.7	0.6	8.2	6.7	1.5
Calgary	6.0	4.3	1.7	2.5	2.1	0.5	6.3	5.1	1.2
Edmonton	7.4	5.5	1.9	3.3	2.7	0.6	8.3	6.8	1.5
Vancouver	5.5	4.5	1.1	3.0	2.6	0.4	7.4	6.5	0.9
Victoria	8.6	6.6	2.0	4.2	3.6	0.6	10.4	9.0	1.4
Non-CMAs	6.5	4.9	1.6	3.6	3.0	0.6	9.0	7.6	1.5
Urban centres	6.6	5.0	1.6	3.4	2.8	0.6	8.6	7.1	1.5

Source: Labour Force Survey

* Absent workers divided by total.

** Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

What's new?

Recent reports and studies

■ JUST RELEASED

■ Apprenticeship training

In 1999, the number of registered apprentices increased 6% to 188,800. Between 1994 and 1999, the number of such apprentices grew 14%—almost returning to the peak reached in the early 1990s. Registrations increased by 15% or more in all but two of the major trade groups. The two exceptions were building construction, and electrical and electronics trades, where increases in 1999 raised registrations to about the same level as in 1994.

As apprenticeship numbers increased, the age profile of apprentices changed. Between 1994 and 1999, a decrease occurred in the 25-to-34 age group, with the increase in apprentices occurring in the older and younger age groups. In 1999, the 20-to-24 age group was the largest, but the most noticeable growth occurred in the 19-and-under age group. The increase in the number of younger apprentices in recent years may have resulted from extensive promotion of apprenticeship training in high schools by governments and trade associations concerned about the aging of the workforce in the trades.

For more information, contact Client Services, Culture, Tourism and the Centre for Education Statistics, at 1 800 307-3382 or (613) 951-7608; fax: (613) 951-9040; educationstats@statcan.ca.

■ Business data online

Statistics Canada's *Business data* provides a single-point access to free business-related information from Statistics Canada. It provides statistics to enable start-ups to assess market characteristics, and to help established firms compare themselves with their industry or analyze employment and income trends. *Business data* fills the growing needs of small businesses for statistics, analysis and market intelligence.

This time-saving, easy-to-use resource is now available online at www.statcan.ca/english/commerce. For more information, contact Laurie Hill, Business and Trade Statistics Field, at (613) 951-6584; laurie.hill@statcan.ca.

■ CANSIM

Effective September 17, 2001, access to CANSIM I's matrix series view is no longer available. As of that date, releases in *The Daily*, as well as tables on the Canadian Statistics Web page, Statistics Canada's on-line catalogue, and electronic publications will refer to CANSIM II table numbers and no longer to the original CANSIM matrix numbers.

CANSIM II offers the same authoritative data, but with major improvements, including multi-dimensional access to make finding information easier. Its Internet address is cansim2.statcan.ca.

CANSIM users with pre-saved queries must reconfigure them for CANSIM II and save them as .htm files. For assistance, contact Customer Support at 1 800 263-1136; infostats@statcan.ca.

■ Evolving Workplace Series

Human resource management policies such as training, variable pay, and employee involvement practices play important roles in workplace change, according to a new report based on data from the 1999 Workplace and Employee Survey (WES).

Employer and employee perspectives on human resource practices shows that almost 50% of Canadian business locations introduced a product or process innovation in 1999, 29% adopted some form of new technology, and more than 40% implemented an organizational change, primarily by re-engineering a work process or by downsizing.

The report also shows that employers implementing workplace changes are more likely to have variable pay practices—that is, performance pay. Workplace

change is also related to human resource practices that increase employee involvement in decision making (job rotation, multi-tasking and teamwork).

The report concludes that human resource practices are key in facilitating workplace change. These practices aim to produce a skilled and motivated workforce that is able to adapt to, and take advantage of, organizational and technological change.

A second report based on WES data shows that one-half of all long-term job vacancies in profit-oriented firms during 1999 were in the retail-trade and consumer-services industries. These sectors, which pay relatively low wages and have high rates of labour turnover, accounted for 50% of job vacancies that went unfilled for at least four months prior to the survey. This suggests that even in periods of strong growth in the high-technology sector, a substantial share of job vacancies is found outside high-tech industries.

The report, *The quest for workers: A new portrait of job vacancies in Canada*, found two types of establishments with high vacancy rates. The first consisted of firms that employed a highly skilled workforce and introduced new technologies. The second consisted of firms that were not unionized, were part of a single-establishment company, and operated in retail-trade and consumer-services industries.

Establishments with indicators of strong skill requirements tended to have relatively high job vacancy rates in 1999. For instance, establishments that implemented an innovation between April 1, 1998 and March 31, 1999 had job vacancy rates of 3.0%, compared with 1.8% for other establishments.

The joint effect of employer size, union status, and industry is substantial. Non-unionized workplaces in retail-trade and consumer-services industries that do not belong to a multi-establishment firm had job vacancy rates of 5.3%. These workplaces accounted for fully one-third of all vacancies in the private sector.

These reports are the first from the Evolving Workplace Series, a co-operative venture of Human Resources Development Canada and Statistics Canada to promote research on the workplace using WES. The survey collects a broad range of information from a sample of employers and their employees. Future reports will cover such topics as training determinants, male-female wage differences, and the connection between computer technology and education.

Employer and employee perspectives on human resource practices (Catalogue no. 71-584-MIE1001, free) and *The quest for workers: A new portrait of job vacancies in Canada* (Catalogue no. 71-584-MIE01002, free) are now available from Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Free publications*. The publications are also available from Human Resources Development Canada's Applied Research Branch site (www.hrdc-drhc.gc.ca/arb). Paper versions (Catalogue no. 71-584-MPE, no. 1, \$15; and Catalogue no. 71-584-MPE, no. 2, \$15) are also available.

The research paper *Which firms have high job vacancy rates in Canada?* (Catalogue no. 11F0019MIE01176, free) is also now available on Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Research papers (free)*, then *Social conditions*. A paper version (Catalogue no. 11F0019MPE, no. 176, \$5/\$25) can be ordered from Hélène Lamadeleine at (613) 951-5231.

For more information, contact the media relations unit, Human Resources Development Canada, at (819) 994-5559. For more information on WES, contact Howard Krebs, Labour Statistics Division, at (613) 951-4063 or Ted Wannell, Business and Labour Market Analysis Division, at (613) 951-3546. To enquire about related statistics or services, contact the Client Services Unit, Labour Statistics Division, at 1 866 873-8788 or (613) 951-4090; fax: (613) 951-2869; labour@statcan.ca.

■ Family income

In 1999, the median income of families rose for a third year in a row. The median total family income of census, or nuclear, families was \$48,600, up 1% over 1998, after adjusting for inflation. This continued a trend of steady modest increases since 1996.

Median total income for husband-wife families rose from \$53,400 in 1998 to \$54,100. For lone-parent families, income increased to \$23,400, compared with \$23,100 in 1998. (Median income is determined by ranking all the declared incomes for an area, and then selecting the figure at which half the incomes are higher and half are lower.)

Families in most provinces and territories saw increases in median total family income in 1999; however, those in Nunavut saw a decline. Once inflation was taken into account, median total family income also declined in Alberta and British Columbia.

For a sixth consecutive year, the highest median family incomes were found in Oshawa (\$62,500) and Windsor (\$62,400). The area with the largest increase was Saint John, where median income climbed 2.8%—from \$44,850 in 1998 to \$46,100 in 1999.

The data are from income tax returns filed in the spring of 2000. All incomes are before tax and after transfers. A census family refers to a married or common-law couple, with or without children at home; or a lone parent of any marital status, with at least one child living at home. There is no restriction on the age of the children at home. Husband-wife families include married and common-law couples with or without children at home. In a senior husband-wife family, one partner must be at least 65 years of age. Lone-parent families consist of one parent with at least one child at home. In a senior lone-parent family, the parent must be at least 65 years of age.

The data for family income (*Family data*, Catalogue no. 13C0016, various prices) and seniors' income (*Seniors*, Catalogue no. 89C0022, various prices) are available for letter carrier routes, urban forward sortation areas (the first three characters of the postal code), cities, towns, census divisions, census metropolitan areas, provinces, territories and Canada. For more information, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Income of individuals

The number of people reporting earnings from wages, salaries or commissions continued to increase in 1999, according to the most recent income tax data. This number (and corresponding proportion of the population) has been increasing since 1993. At the same time, fewer people received Employment Insurance (EI) or social assistance benefits in 1999 than in 1998. The number of self-employed stayed virtually the same.

The number of wage and salary earners increased in all provinces and territories in 1999. Newfoundland and Nunavut were the only places where the increased number represented a slightly lower proportion of the total population in 1999 than in 1998.

The increase was accompanied by an increase in median employment income, particularly in the eastern and central provinces. Median employment income has increased gradually since 1996. Women's income rose in all provinces and territories in 1999.

At the national level, Canadians received only slightly more money in government transfers in 1999 compared with the previous year. In general, income from EI continued to decline. Only Alberta, Newfoundland and Saskatchewan had increases in the number of EI recipients and in the average amounts received. Between 1998 and 1999, the number of recipients of social assistance benefits fell 5.9%, whereas average benefits declined 1.6%.

The data for *Neighbourhood income and demographics* (Catalogue no. 13C0015, various prices), the *Labour force income profile* (Catalogue no. 71C0018, various prices) and the *Economic dependency profile* (Catalogue no. 13C0017, various prices) are available for letter carrier routes, urban forward sortation areas (the first three characters of the postal code), cities, towns, census divisions, census metropolitan areas, provinces, territories and Canada. For more information, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Gifts and donations

Canadians' generosity has been rising slowly, both in constant dollars and as a proportion of household income for several decades, according to a recent study. The rise in donations to charitable organizations is slowing, however, while gifting to individuals is accelerating.

The average annual value of gifts and contributions for each household rose steadily from \$986 in 1969 to \$1,700 in 1996. This total giving accounted for 4.5% of the average disposable household income in 1996, up from 3.3% in 1969.

The manner in which Canadians give gifts and make charitable donations has been changing. For example, of money gifted to organizations, a shrinking proportion is going to religious organizations.

This report is based on household spending data from Family Expenditure Surveys between 1969 and 1996, and the Survey of Household Spending since 1997. The study provides information about regional and income quintile patterns in gifts and charitable donations. It reveals that the gap in giving (as a proportion of household income) between low-income and high-income households is narrowing.

Generosity in Canada: Trends in personal gifts and charitable donations over three decades, 1969 to 1997 (Catalogue no. 75F0033MIE, free) is one of a series of studies on the nonprofit sector, conducted under the auspices of Statistics Canada's Nonprofit Sector Knowledge Base Project. It is available on Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Free publications*, then *Social conditions*. For more information, contact Dr. Paul Reed, Public Institutions Division, at (613) 951-8217; reedpau@statcan.ca.

■ **Giving, Volunteering and Participating**

In 2000, Canadians were volunteering less but giving more money than they were in 1997, according to a new snapshot of voluntary and civic action in Canada. However, the rate of increase in average donations since 1997 did not keep pace with the rate of increase of average household incomes of donors.

The second National Survey of Giving, Volunteering and Participating (NSGVP) records how Canadians give money and other resources to individuals and to charitable and non-profit organizations; how they volunteer time to charitable and non-profit organizations and directly to individuals; and how they participate in organizations and civic life. The NSGVP was developed through a partnership of federal government departments and voluntary organizations. These include the Canadian Centre for Philanthropy, Canadian Heritage, Health Canada, Human Resources Development Canada, Statistics Canada, and Volunteer Canada.

The federal government and the voluntary sector recently launched the Voluntary Sector Initiative (VSI) to help strengthen voluntary organizations in Canada. It formally recognizes the voluntary sector as an important pillar of Canadian society along with the private and public sectors. The VSI provided funding to conduct the NSGVP in 2000. Current plans call for the survey to be repeated in 2003.

Charities and non-profit organizations continued to rely on a relatively small group of donors, according to the survey. The top one-quarter of donors, who gave \$213 or more during the year, accounted for 82% of total donations. In fact, a small number of people provided the bulk of charitable and voluntary support in the country. Fewer than one in ten Canadians contributed 46% of the total dollar value of all donations as well as 40% of all volunteer hours. The voluntary sector continues to depend heavily on these core supporters.

There were substantial variations among the provinces in financial donations to non-profit and charitable organizations in 2000. These variations reflected the diversity of Canadians' economic circumstances, social values, cultural conventions, living conditions, and social milieus. People in Alberta and three of the Atlantic provinces—Newfoundland, Prince Edward Island and Nova Scotia—had the highest rates of financial donation among the provinces in 2000. All were well above the national rate of 78%. British Columbia and Quebec had the lowest rates at 74%.

The report *Caring Canadians, involved Canadians: Highlights from the 2000 National Survey of Giving, Volunteering and Participating* (Catalogue no. 71-542-XIE, free) is now available on Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Free publications*, then *Social conditions*. The report can also be purchased in paper format (Catalogue no. 71-542-XPE, \$15). For more information about the current survey results and related products and services, contact Client Services, Special Surveys Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; ssd@statcan.ca.

■ **Adult education**

Individuals with relatively little schooling and those with poor literacy skills were least likely to participate in adult education programs in Canada and the United States, according to a new study based on the 1994-to-1998 International Adult Literacy Survey (IALS), a 22-country initiative that studied how well adults used printed information to function in society. The IALS also collected information on the incidence and volume of participation in adult education and training.

The monograph *Adult education participation in North America: international perspectives*, analyzes 15 international indicators of participation in adult education. It found several factors that influenced participation in adult education programs. First, adults who already possessed higher levels of educational qualifications were much more likely than those with lower qualifications to participate. In many countries, the education-related differences were even more important for study intensity than for the overall participation rate. On both indicators, Canada and the United States were in an average position.

The study also found that those individuals more likely to participate in adult education programs were younger adults rather than older; employed rather than the unemployed; in white-collar, high-skill jobs rather than blue-collar, lower-skill jobs; and working for large businesses rather than small businesses.

In Canada, 35% of the population aged 25 to 65 participated in adult education programs, compared with 39% for the United States, and 34% for all countries. Rates were highest in Finland (56%) and lowest in Portugal (13%).

In all countries, employers were the most common sponsors of adult education and training. American employers scored high on this measure. In the United States, 67% of participants received financial support from their employer, compared with 51% in Canada. The average was 63%. The likelihood of receiving support from employers was much higher for workers with high literacy skills than those with poor skills. American employers were less likely than Canadian employers to offer training based on the level of literacy of employees.

The monograph *Adult education participation in North America: international perspectives* (Catalogue no. 89-574-XPE/XIE, \$10/free) is now available on Statistics Canada's Web site (www.statcan.ca) under *Our products and services* and Human Resources Development Canada's Web site (www.hrdc-drhc.gc.ca/arb). For more information, contact Client Services, Centre for Education Statistics, at 1 800 307-3382 or (613) 951-7608; fax: (613) 951-9040; educationstats@statcan.ca.

■ Information Technology Occupations

Data from the Pilot Survey on Information Technology Occupations, 2000: Employee Survey are now available. This experimental survey was conducted on behalf of Human Resources Development Canada to test methods for a future national survey of information technology occupations. The results provide information on 21 information technology occupations for the computer design and related services industry across Canada, the architectural, engineering and related services industry in Quebec, and the insurance carriers industry in Ontario. The data focus on employee work history, wages, educational background, training and skills.

This survey was preceded by the Pilot Survey on Information Technology Occupations, 2000: Employer Survey, which collected data from employers about hiring and recruitment practices, employee retention and training. These data were released in September 2000.

Due to the limited scope of these pilot surveys, their results cannot be applied to all sectors having information technology occupations. The data are useful, however, as an indication of possible trends that will be explored in the more extensive national survey now being organized. For more information, contact Lucie Cloutier, Small Business and Special Surveys Division, at (613) 951-1634; lucie.cloutier@statcan.ca.

■ Postal area profiles

The 1999 *Postal area profiles*, a databank profiling more than 5,000 communities across Canada, is now available.

The profiles comprise five tables, which contain information on demographics, selected sources of income, dependency on government transfers, labour force participation, and family characteristics. Data on each community can be compared with provincial and national figures. The profiles provide data for a four-year period.

To order *Postal area profiles* (Catalogue no. 89C0021, various prices), or for more information, contact Client Services, Small Area Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Survey of Financial Security

The document *Survey of Financial Security: Estimating the value of employer pension plan benefits* describes the methodology that the Survey of Financial Security (SFS) will use to estimate the value of employer-sponsored registered pension plan benefits for various groups of people.

Initial results from the SFS, which provides information on the net worth of Canadians, were released in March 2001. The survey collected information on the value of the financial and non-financial assets of each family unit and on the amount of their debt.

Statistics Canada is now refining these initial estimates of net worth by adding to them an estimate of the value of benefits accrued in registered pension plans (RPPs). This is an important addition to any asset and debt survey, since for many families, it is likely to be one of the largest assets.

This new document describes the methodology that will be used to estimate the value of RPPs for three groups: people who belonged to an RPP at the time of the survey; those who had previously belonged to an RPP and either left the money in the plan or transferred it to a new plan; and those receiving RPP benefits.

The report *Survey of Financial Security: Estimating the value of employer pension plan benefits* (Catalogue no. 13F0026MIE01003, free) is available on Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Research papers (free)*, then *Personal finance and household finance*, then *Asset and debt research paper series*. For more information, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; income@statcan.ca.

■ Survey of Labour and Income Dynamics

The cross-sectional public-use microdata files for the 1996 and 1997 Survey of Labour and Income Dynamics (SLID) are now available.

Until 1997, the Survey of Consumer Finances (SCF) provided public-use microdata files to meet the needs of users of cross-sectional household income. With the release of these files, Statistics Canada continues the transition from SCF to SLID for cross-sectional household income data.

The *Survey of Labour and Income Dynamics cross-sectional public-use microdata files on CD-ROM* (Catalogue no. 75M0010XCB, \$2,000 each) are now available for 1996 and 1997. Each year's files are available separately. For more information about the survey and related products and services, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; income@statcan.ca.

■ Spending patterns

Spending patterns in Canada presents analysis and key tables from the annual Survey of Household Spending (which replaced the Survey of Family Expenditures and the Household Facilities and Equipment Survey). Data from the 1999 Survey of Household Spending were originally released in December 2000.

The survey collects information about expenditures by households and families in Canada on a wide variety of goods and services—from food and shelter to pet expenses and movie admissions. It also collects data about dwelling characteristics, household appliances, home entertainment and communications equipment, and vehicles.

Spending patterns in Canada, 1999 (Catalogue no. 62-202-XPE/XIE, \$45/\$34) is now available. For more information about the current survey results and related products and services, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; income@statcan.ca.

■ Advanced technology

Two new research papers investigate challenges that firms in the manufacturing sector face in adopting new technologies.

Impediments to advanced technology adoption for Canadian manufacturers investigates the relative importance of various impediments, using data from the 1993 Survey of Innovation and Advanced Technology. According to the study, cost-related impediments were reported most frequently. These included equipment costs, as well as the costs of capital investment, technology acquisition, software development, and maintenance expenses.

Other impediments related to institutional problems, such as taxation and government regulation; labour problems, such as a shortage of skills and training difficulties; organizational problems, such as poor management attitude or worker resistance; and information problems, such as a lack of scientific and technical information or insufficient technical support from vendors. Of these, labour problems were most often cited, followed by organizational problems.

Skill shortages and advanced technology adoption uses the 1998 Survey of Technology Adoption to focus on the importance of skill shortages. The study reports that between 1993 and 1998, rates of adopting advanced technology doubled, raising concerns about shortages of skilled labour. The demand for skilled labour increased as technological growth and expansion in the economy accelerated. This growth was particularly rapid in network communications technologies, which require a highly skilled workforce.

The study concludes that labour shortages were not the impediment that blocked adoption of technology. Rather, plants for which skill shortages were considered an obstacle were more likely to adopt advanced technologies, and to adopt greater numbers of them.

Impediments to advanced technology adoption for Canadian manufacturers (Catalogue no. 11F0019MPE01173, \$5/\$25 or Catalogue no. 11F0019MIE01173, free), and *Skill shortages and advanced technology adoption* (Catalogue no. 11F0019MPE01175, \$5/\$25 or Catalogue no. 11F0019MIE01175, free) are now available. The free versions can be downloaded from Statistics Canada's Web site (www.statcan.ca). From *Our products and services*, choose *Research papers (free)*, then *Science and technology*. Paper versions are also available at the cost shown.

For more information, contact David Sabourin or John Baldwin, Micro-Economic Studies and Analysis Division, at (613) 951-3735; sabodav@statcan.ca or (613) 951-8588; baldjoh@statcan.ca, respectively.

■ *Women in Canada*

The entry of large numbers of women into the paid workforce has been one of the dominant social trends in Canada over the last half century. That is one of the key findings in *Women in Canada 2000* (Catalogue no. 89-503-XPE), the latest edition of Statistics Canada's seminal series of reports on male/female trends in Canada, which was released in October, 2000 and is published only every five years.

More recent information is provided in *Women in Canada: Work chapter updates* (Catalogue no. 89F0133XIE, free), which is now available. The report is an adaption of the section in *Women in Canada 2000* entitled "Paid and Unpaid Work" by Nancy Zukewich. For more information on this report, contact Colin Lindsay, Housing, Family and Social Statistics Division, at (613) 951-2603; fax: (613) 951-0387; lindcol@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Annual Surveys—Service Industries
Frequency: Annual
Contact: Lucie Lussier
(613) 951-0410

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-4090

Survey of Employment, Payrolls and Hours

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources
Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Financial Security

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General social survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusteed Pension Funds

Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

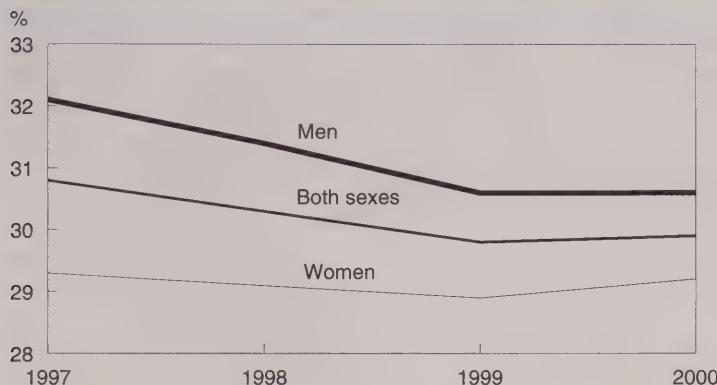
Adult Education and Training Survey

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Client Services
(613) 951-7608

Unionization rates by sex, 1997 to 2000



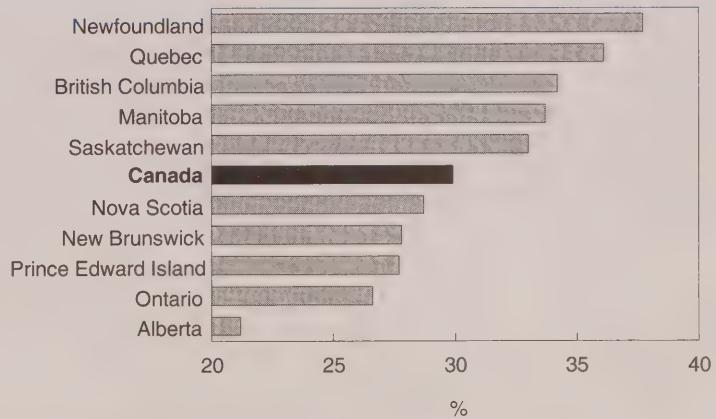
Source: Labour Force Survey

According to the Labour Force Survey, there were 3,740,000 union members in 2000, representing 29.9% of employees. While this rate is slightly higher than the previous year (29.8%), it is a full percentage point lower than in 1997 (30.8%).

Women now represent 46.9% of unionized workers in Canada. Between 1997 and 2000, the unionization rate for women was fairly stable while the rate for men decreased by 1.5 percentage points. As a result, in 2000, the two rates were only 1.4 points apart.

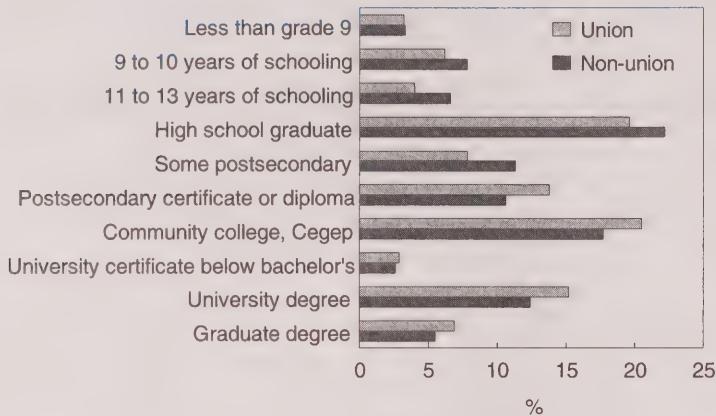
Unionization rates vary by province, with the highest rate being observed in the province of Newfoundland (37.7%). This rate is very high compared to the other Atlantic provinces, all of which have rates below the national average. With a rate of 36.1%, Quebec ranks second. The lowest rate is in Alberta (21.2%), which is quite low compared with Manitoba (33.7%), Saskatchewan (33.0%) and British Columbia (34.2%), all of which have rates above the national average. Ontario has the second lowest unionization rate, 26.6%.

Unionization rates by province



Source: Labour Force Survey, 2000

Educational attainment of union members and non-union employees

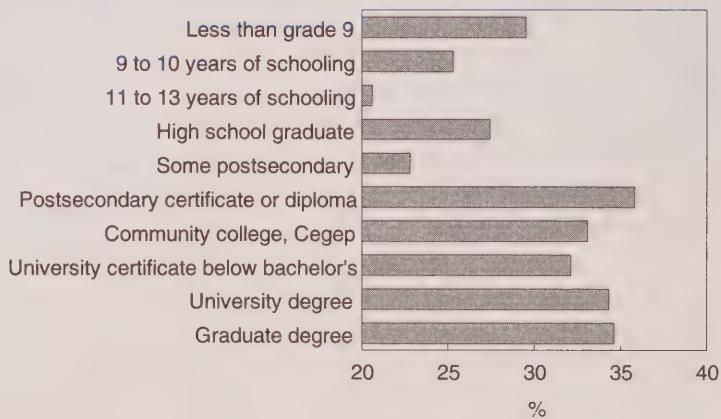


Source: Labour Force Survey, 2000

Union members are in general better educated than non-union members. The majority of union members have postsecondary education (59% compared with 49% of non-union employees). Union members outnumber non-union members in the higher educational categories, while the reverse is true in the lower categories.

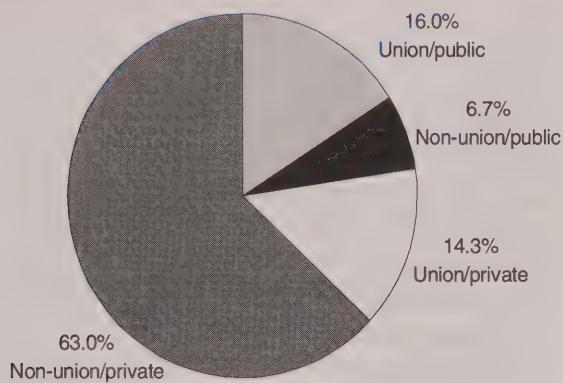
Unionization rates of employees with graduate degrees, as well as those with low levels of education have decreased since 1997. Between 1997 and 2000, the rate for those with a graduate degree decreased by 3.0 percentage points, and the rate for those with less than grade 9 education decreased by 2.9%. The latter rate may reflect the retirement of older union members since persons with such low levels of education tend to be concentrated among older workers.

Unionization rates of employed persons by educational attainment



Source: Labour Force Survey, 2000

Unionized and non-unionized employees in the private and public sectors

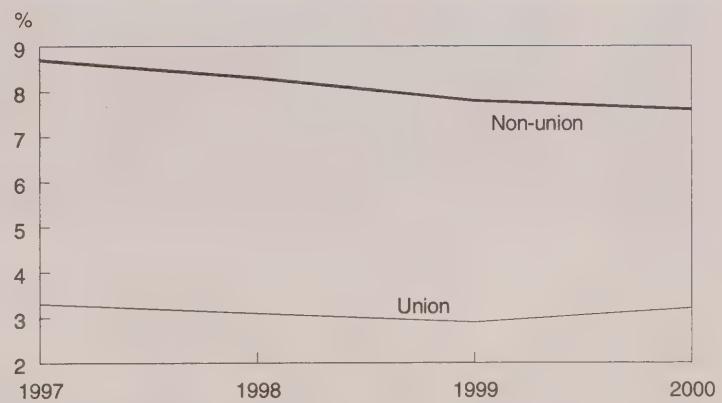


The majority of employees are not unionized and work in the private sector. The private and public sectors contain approximately equal numbers of union members, but because of the size of the public sector, the unionization rate is much higher in the public sector.

Source: Labour Force Survey, 2000

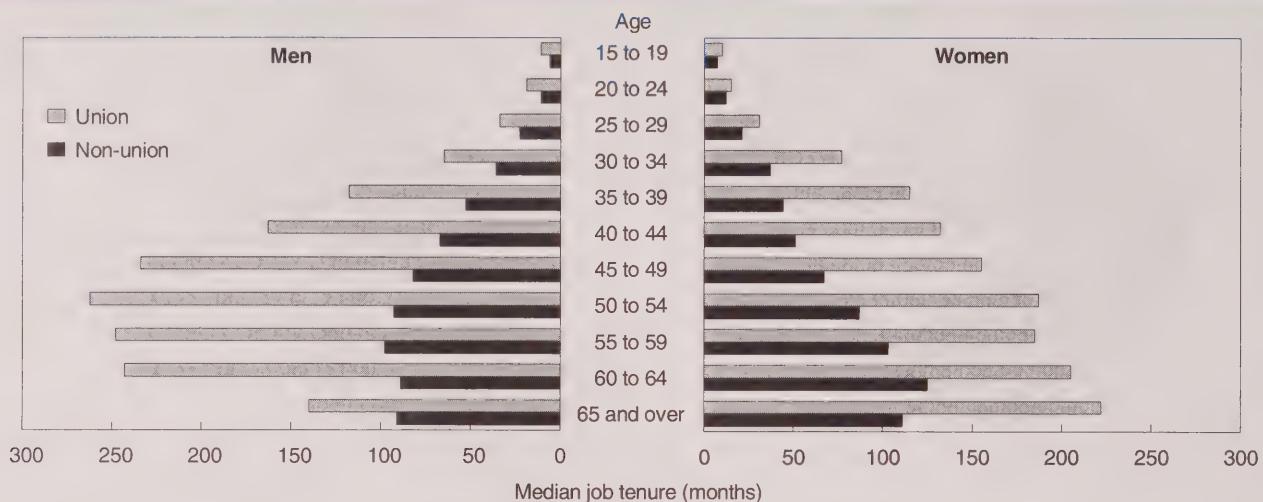
The proportion of non-union employees who work 50 hours or more per week is almost two and a half times that of union employees: 7.6% versus 3.2%. While the proportion of union members working long hours hovered around 3% between 1997 and 2000, the proportion of non-union members working 50 hours or more per week decreased from 8.7% in 1997 to 7.6% in 2000.

Proportion of employees working 50 or more hours per week



Source: Labour Force Survey

Median job tenure of union members and non-union employees, by age



Source: Labour Force Survey, annual averages, 2000

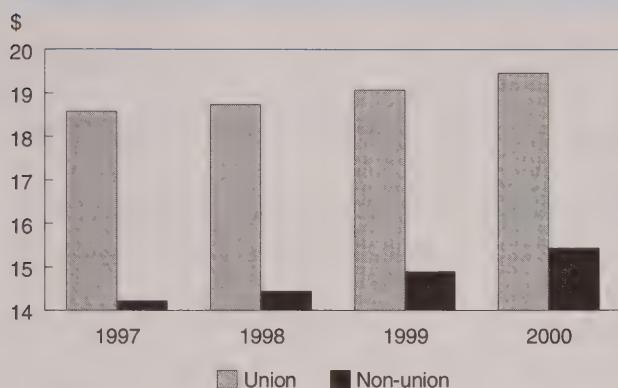
Job tenure is the length of time that employees (union or non-union) have been with their current employer. Because age largely determines the length of time that employees could be with their current employer, tenure data are more meaningful when disaggregated by age.

At all ages, union members have higher median job tenure than non-union employees—often considerably higher.

Charts and text were adapted from “A profile of union members in Canada,” a Statistics Canada paper presented at the International Conference on Union Growth, held in Toronto, Ontario, April 30 to May 1, 2001. For more information, contact Joanne

Pilon at (613) 951-8659; joanne.pilon@statcan.ca or Ernest B. Akyeampong at (613) 951-4624; akyeern@statcan.ca, Labour and Household Surveys Analysis Division; fax: (613) 951-4179.

Average hourly earnings of union and non-union employees

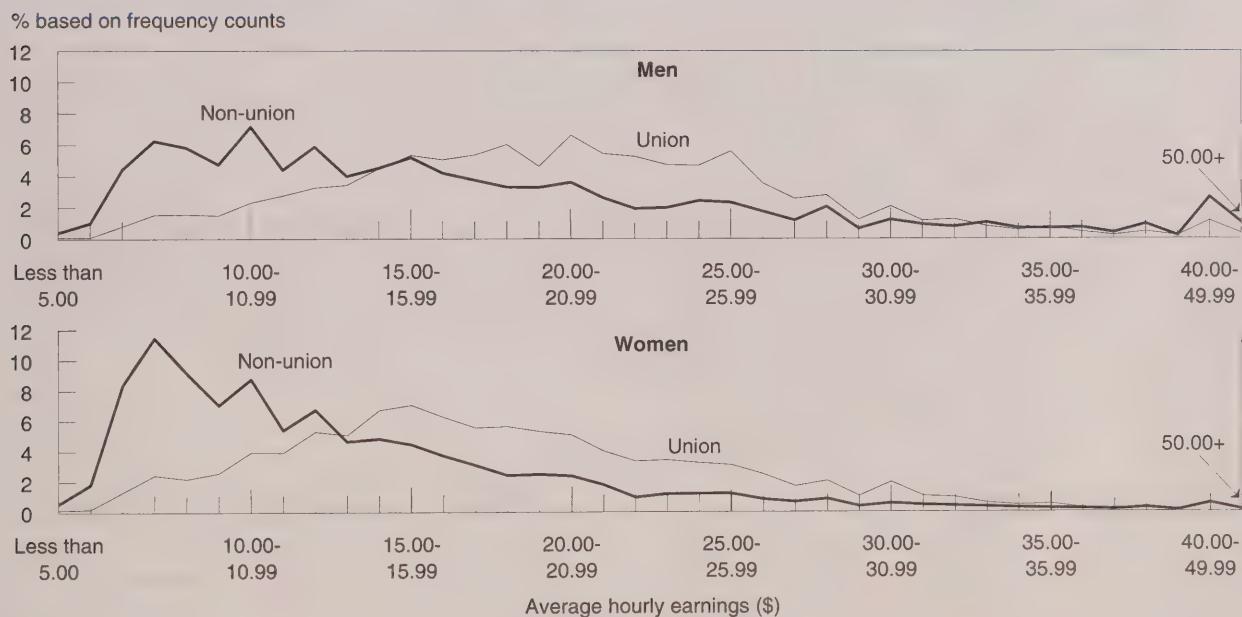


Source: Labour Force Survey

Perhaps not surprisingly, union members had substantially higher average hourly earnings than non-union members: \$19.46 versus \$15.43 in 2000. These refer to average hourly earnings (aggregate earnings divided by the aggregate hours for each group) as opposed to average hourly wage rates (aggregate hourly wage rates divided by the number of union members or non-union employees).

However, after 1997 the average hourly earnings of non-union employees increased more (\$1.21 or 8.5%) than those of union employees (\$0.88 or 4.7%) thus slightly narrowing the gap between the two (from \$4.36 to \$4.03).

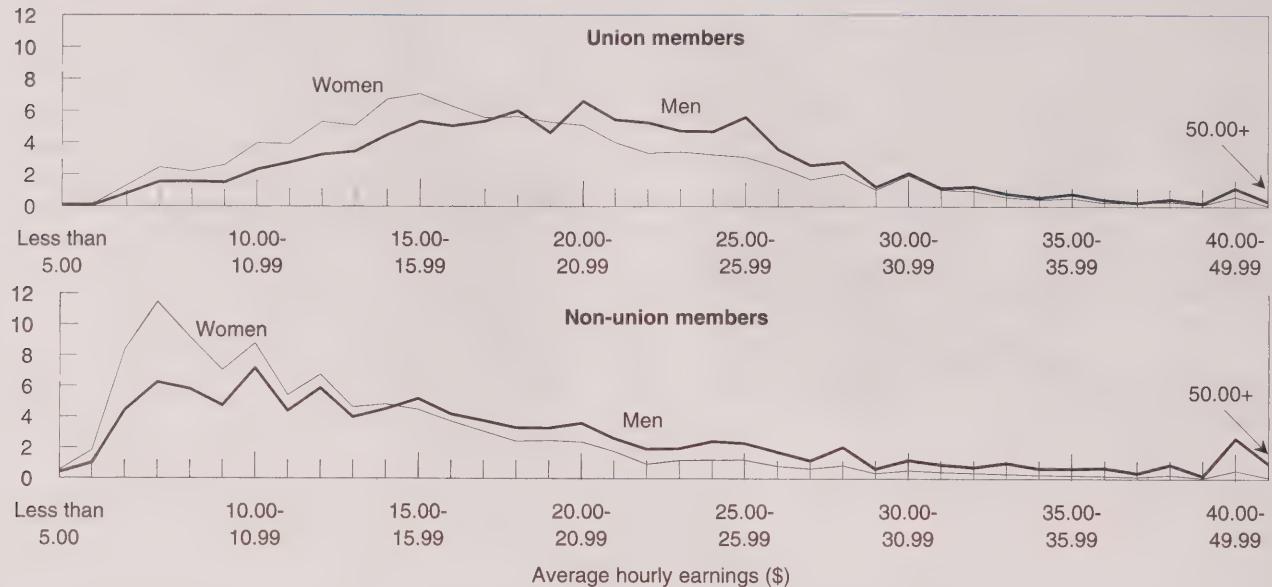
Men and women, by union status and earnings



Source: Labour Force Survey, 2000

Union and non-union members, by earnings and sex

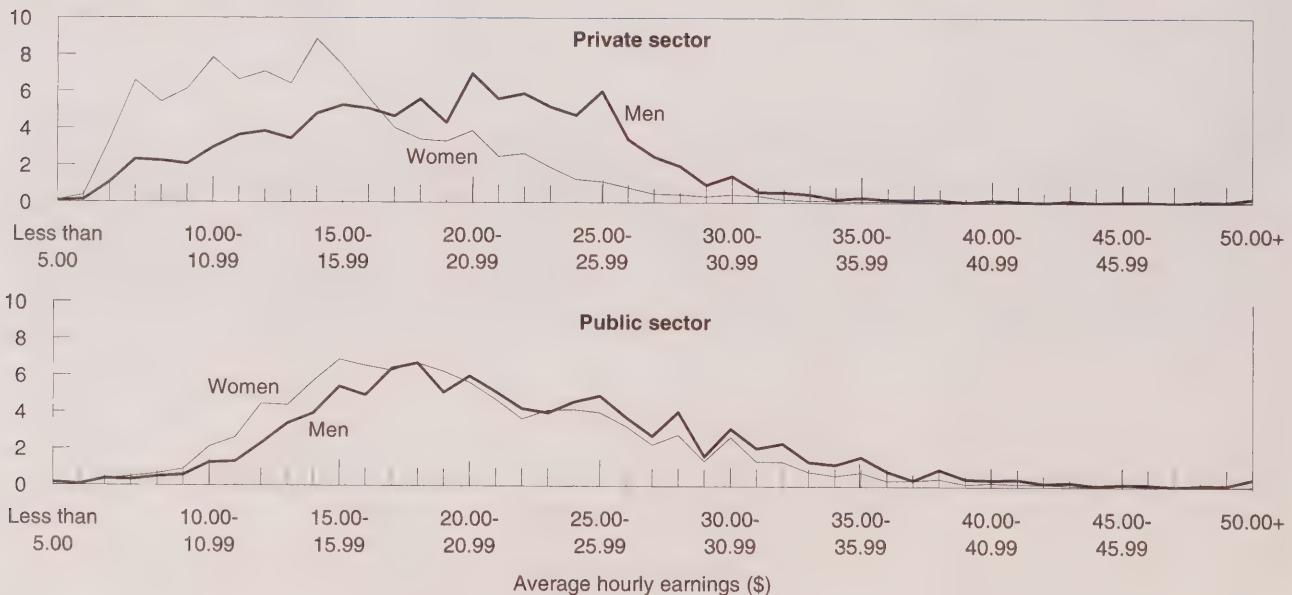
% based on frequency counts



Source: Labour Force Survey, 2000

Earnings of union members in the private and public sector, by sex

% based on frequency counts



Source: Labour Force Survey, 2000

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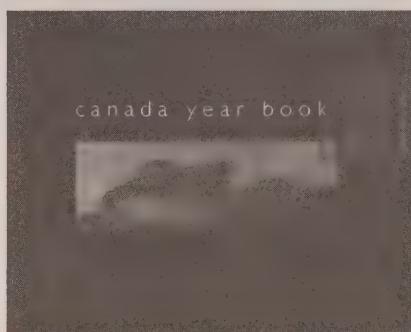
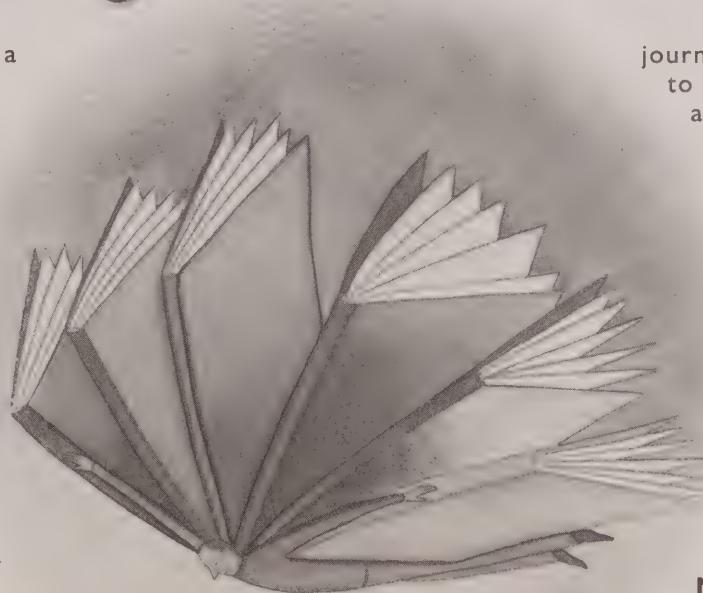
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